January - February 2024

THE LEADING FLORICULTURAL JOURNAL IN THE REGION

FLORICULTURE

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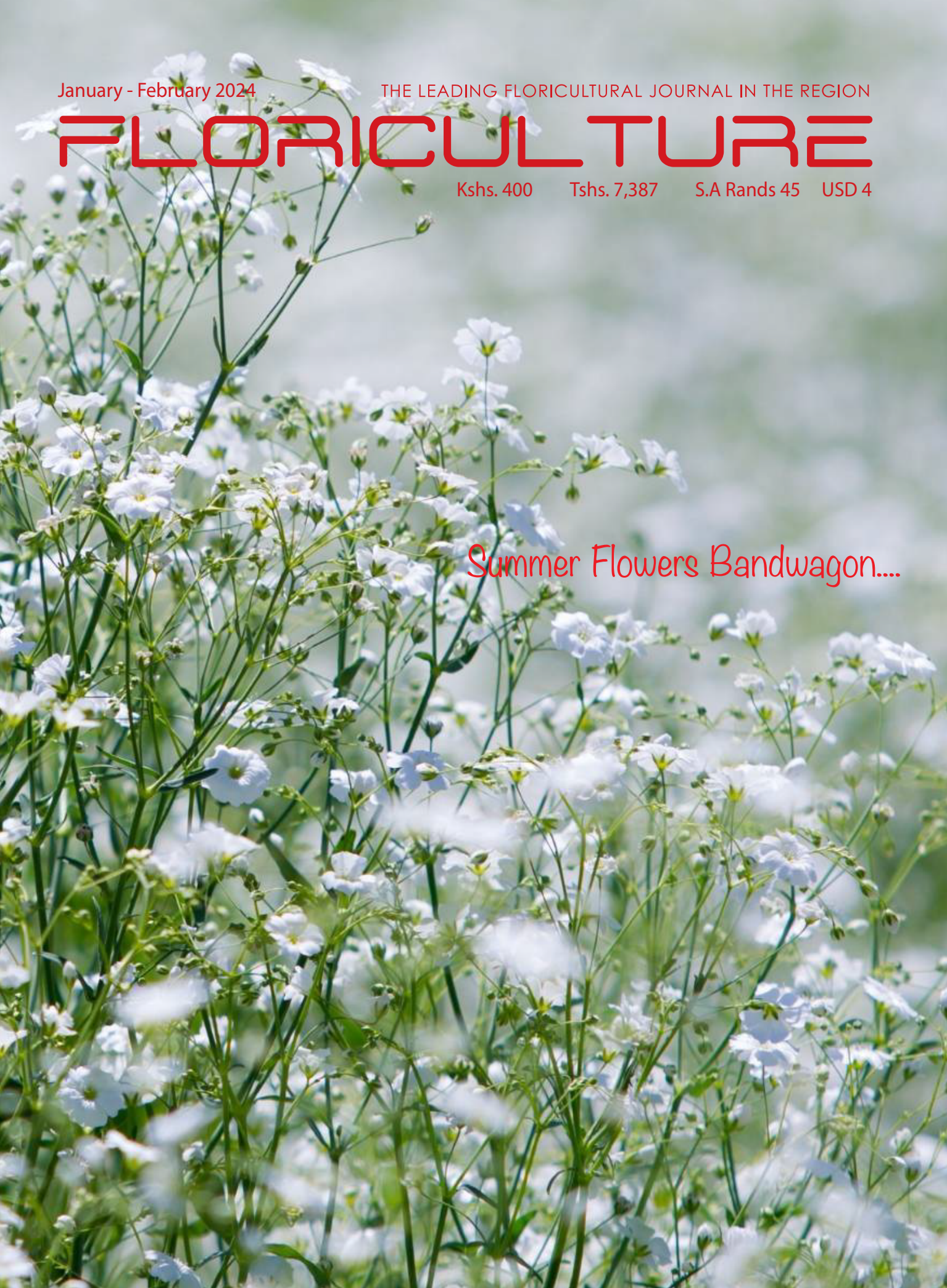

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A level Playing Field

Last year has been one of the most turbulent, weather-related years on record and unfortunately, the challenges did not end there. From ongoing high input prices and poor returns, to plans being paused to tackle unstable forex, growers faced many such challenges. However, despite all the difficulties we have faced, the potential and importance of Kenya's flower growing is substantial going forward.

Growers are extremely vulnerable to elements that are out of their control such as extreme weather events, geopolitical tensions, changes to policy and production costs. However, ensuring the marketplace is a level playing field for our growers, and creating policies that enhance flower growing, will support growers to invest in the future of flower growing. This is our clarion call in 2024.

Finally, I wish you all a prosperous and healthy New Year from myself and the entire Floriculture Magazine team, and please remember to stay safe when out and about on farms.

Masila Kanyingi
Editor

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Blossoming Love...

In the connection between nature and human intervention, Kenya's flower farms stand as stewards of love, cultivating blossoms that transcend mere petals and stems, embodying the profound emotions shared between individuals. May this *Valentine's Day* be a celebration not only of romantic love but also of the love for nature, sustainability, and the artistry that transforms a simple bloom into a messenger of the heart.

Floriculture

January - February 2024

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Blossoming Love: Here Comes Valentine's Day 2024...

By Mary Mwende

As we approach the month of February, Kenya's vibrant floriculture industry gears up for the grand crescendo of love – Valentine's Day. Kenya, often referred to as the "Flower of Africa," stands proud as a floral powerhouse. Blessed with a favorable climate and diverse landscapes, the country's floriculture sector plays a pivotal role in the global flower trade. Roses, lilies, carnations, and orchids – Kenya's flower farms cultivate a stunning array of blooms that embody the essence of love.

The journey begins months before Valentine's Day, as flower farms across the country kick into high gear. The meticulous cultivation of flowers requires careful planning to ensure an abundant supply for the surge in demand during the romantic season. Growers implement innovative techniques and cutting-edge technologies to nurture the finest blooms that will find their way into countless bouquets exchanged on February 14th.

Cultivating Romance

Walking through the lush fields of Kenya's flower farms, one witnesses an array of colours and scents. The meticulous care given to each bloom is a testament to the dedication of the growers who understand the profound role their flowers play in expressions of love.

Kenyan flower farms, embrace sustainable practices and technological advancements to enhance the quality of their produce. From state-of-the-art greenhouses that control climate conditions to organic fertilizers that nurture the soil, every aspect of cultivation is fine-tuned to create the perfect blossoms.

Challenges Faced

However, the road to a perfect bloom is not without thorns. The floriculture industry in Kenya faces challenges that range from unpredictable weather patterns to logistical hurdles. Climate variations can impact the growth cycle, affecting the quality and quantity of flowers produced. Moreover, the global economic landscape introduces uncertainties, influencing market dynamics and demand.

Behind the Scenes

To truly appreciate the beauty of Kenya's floriculture industry, we take a behind-the-scenes look at some of the country's leading flower farms. Here, we meet the passionate growers and skilled workers who toil day in and day out to ensure that each bloom meets the highest standards of quality.

Sustainable practices are at the forefront of the industry's ethos. Farmers share insights into water conservation, reduced chemical usage, and eco-friendly packaging initiatives. It's a delicate balance between nature and technology, with the ultimate goal of providing consumers with ethically sourced and environmentally responsible flowers.

The Language of Flowers

Flowers have been the silent messengers of love throughout history, each bloom carrying a unique message. As we anticipate Valentine's Day, it's essential to understand the language of flowers. The red rose symbolizes deep love and passion, making it the undisputed champion of romantic gestures. Lilies convey devotion, carnations express fascination, and orchids symbolize rare and delicate beauty.

This Valentine's Day, couples can choose blooms that resonate with the nuances of their relationships, adding a personal touch to their expressions of love. Florists and growers work in tandem to educate consumers about the meaning behind each flower, enhancing the emotional depth of their floral choices.

Love in Full Bloom: Global Valentine's Day Traditions

Valentine's Day, celebrated on February 14th, is a day dedicated to love and affection. While the core essence remains the same, the traditions surrounding this day vary greatly across the globe.

1. Japan: An Exchange of Hearts and Handwritten Letters

In Japan, Valentine's Day is a unique affair where women express their feelings by giving chocolates to men. However, the twist lies in the reciprocation, as men are expected to return the gesture on White Day, celebrated on March 14th. This cultural exchange emphasizes the beauty of patience and reciprocation.

2. South Korea: A Month of Love

In South Korea, the celebration extends beyond a single day. The 14th of every month has a love-related theme. For example, May 14th is known as Rose Day, when couples exchange roses. This month-long celebration culminates in Black Day on April 14th, where singles gather to eat black bean noodles and, hopefully, find a partner.

3. Italy: A Romantic Feast

In Italy, Valentine's Day is celebrated with gusto. The day is marked by romantic dinners, exchanges of gifts, and declarations of love. The iconic city of Verona, known for being the setting of Shakespeare's "Romeo and Juliet," becomes a focal point for lovers.

4. Brazil: Dia dos Namorados

Brazil celebrates its version of Valentine's Day, known as "Dia dos Namorados," on June 12th. The date coincides with the eve of Saint Anthony's Day, the marriage saint. Brazilian couples exchange gifts, cards, and enjoy romantic dinners, creating a vibrant and lively atmosphere.

5. India: The Week of Love

In India, Valentine's Day is not just a day but part of a week-long celebration known as Valentine's Week.

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Each day leading up to February 14th has a special significance, culminating in the celebration of love on the final day.

The Countdown to Valentine's Day:
As the calendar inches closer to February 14th, the excitement in the floriculture industry reaches a fever pitch. Florists, both local and international, collaborate with flower farms to create exquisite arrangements that will find their way into homes, offices, and romantic rendezvous.

The logistics are fascinating. From the farm to the florist to the customer's doorstep – each step is carefully coordinated to ensure the freshness and vitality of the flowers. The days leading up to Valentine's Day are a whirlwind of activity as bouquets are arranged, inspected, and dispatched with meticulous care.

This Valentine's Day, let us join hands in celebrating the love that not only blooms in the hearts of couples but also in the fertile fields of Kenya. As we anticipate the exchange of heartfelt gestures through the language of flowers, let us appreciate the dedication and artistry that make Valentine's Day special.

In the connection between nature and human intervention, Kenya's flower farms stand as stewards of love, cultivating blossoms that transcend mere petals and stems, embodying the profound emotions shared between individuals. May this Valentine's Day be a celebration not only of romantic love but also of the love for nature, sustainability, and the artistry that transforms a simple bloom into a messenger of the heart.

Understanding Cut Flower Scouting

Scouting promotes sustainable practices by minimizing the use of harmful chemicals and optimizing resource utilization. By identifying potential issues before they escalate, growers can adopt preventive measures that align with sustainable agriculture principles.

In the heart of East Africa, Kenya has emerged as a prominent player in the global cut flower industry. The nation's temperate climate, fertile soils, and skilled labour force create a favorable environment for producing a wide variety of high-quality cut flowers. In this realm of horticulture, scouting, a fundamental agricultural practice, takes center stage. This practice involves systematic monitoring of crops for pests, diseases, and other growth-related issues. In Kenya's cut flower growing sector, scouting plays a pivotal role in ensuring product quality, maintaining profitability, and upholding sustainability.

I. The Significance of Scouting in Cut Flower Growing

Cut flower growing is a delicate balance between art and science, where care and attention are essential to produce aesthetically pleasing and healthy blooms. Scouting, is an indispensable practice that aligns with the principles of sustainable agriculture. It involves continuous monitoring of crops to detect the early signs of pests, diseases, nutrient

imbalances, and other stressors that might hamper plant growth.

Scouting offers several key advantages

1. Pest and Disease Management: Pests and diseases pose significant threats to the cut flower industry. The close quarters in which flowers are cultivated make them susceptible to rapid pest outbreaks and disease transmission. Through vigilant scouting, farmers can swiftly identify the emergence of pests or diseases, allowing for timely intervention measures. This reduces the reliance on chemical pesticides, promoting environmentally-friendly practices.

2. Quality Assurance: The quality of cut flowers significantly impacts market demand and price. Scouting enables growers to address issues

that could compromise flower quality, such as malformation, discoloration, or deformities caused by pests or unfavorable growing conditions. Detecting such issues early on facilitates corrective actions, ensuring that only premium quality blooms reach the market.

3. Yield Enhancement: Optimizing yield is a core objective for any agricultural venture. Scouting assists farmers in identifying factors that could hinder optimal growth, such as nutrient deficiencies or water stress. Addressing these factors promptly contributes to increased flower production, subsequently boosting profitability.

4. Sustainability: Kenya's cut flower industry has faced scrutiny for its environmental impact, particularly in terms of water usage and pesticide residues. Scouting promotes sustainable practices by minimizing the use of harmful chemicals and optimizing resource utilization. By identifying potential issues before they escalate, growers can adopt preventive measures that align with sustainable agriculture principles.

II. Methodologies of Scouting

Scouting in cut flower farms involves a systematic approach that encompasses various steps, from field observation to data analysis. This process is rooted in the principles of integrated pest management and tailored to the specific challenges of the region's cut flower cultivation.

1. Field Observations: Scouting begins with frequent and thorough field observations. Skilled scouts traverse the flower fields, carefully inspecting plants for signs of pest infestations, diseases, nutrient deficiencies, and any other stressors. These scouts are equipped with knowledge about the typical symptoms associated with various issues.

2. Identification and Documentation: Accurate identification of pests, diseases, and other growth-related problems is crucial. Once an issue is identified, scouts document their findings through written notes, photographs, and even digital apps. This data forms the foundation for decision-making and strategy formulation.

3. Pest Life Cycle Understanding: Understanding the life cycles of pests and diseases is vital for effective scouting. By recognizing the vulnerable stages in their life cycles, growers can focus their interventions at the most opportune moments. This minimizes the need for constant

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pesticide application and reduces the risk of resistance development.

4. Data Analysis and Interpretation: The data collected by scouts is analyzed to discern patterns and trends. This step enables growers to make informed decisions about when and how to intervene. Advanced data analysis techniques, including predictive models, are increasingly being integrated into scouting practices to enhance accuracy and efficiency.

5. Integrated Interventions: Scouting doesn't merely end with identifying problems. It extends to implementing interventions that align with IPM principles.

These interventions include cultural practices, biological control methods, and judicious use of pesticides when necessary. The goal is to achieve a harmonious balance between crop protection and environmental sustainability.

"Scouting doesn't merely end with identifying problems. It extends to implementing interventions that align with IPM principles. These interventions include cultural practices, biological control methods, and judicious use of pesticides when necessary.

III. Challenges and Future Directions

While scouting is undeniably valuable in Kenyan cut flower growing, it's not without its challenges. Some of the key challenges that scouts and growers face include:

1. Labour Intensity: Scouting is a labour-intensive process that requires skilled personnel. The shortage of skilled labor in the agricultural sector, coupled with the physically demanding nature of scouting, poses challenges in maintaining consistent and effective scouting practices.

2. Rapid Pest Evolution: Pests and diseases can evolve rapidly, leading to the emergence of new strains or species that are resistant to conventional control methods. This necessitates continuous research and adaptation of scouting strategies to stay ahead of evolving pest threats.

3. Data Management: Collecting and managing scouting data can be overwhelming, especially on larger flower farms. There is a growing need for digital solutions and data management tools that can streamline the process, enhance data accuracy, and facilitate real-time decision-making.

4. Economic Constraints: Scouting, when not integrated into a holistic pest management strategy, can incur costs in terms of labor, materials, and time. For smaller farms with limited

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resources, finding the balance between the benefits of scouting and its associated costs can be challenging.

5. Climate Variability: Kenya's climate can be variable, impacting the prevalence of pests and diseases. Climate change may lead to shifts in pest populations and their activity patterns, requiring flexible scouting approaches that can adapt to changing conditions.

6. Collaboration and Knowledge Sharing: Scouting effectiveness can be enhanced through collaboration and knowledge sharing within the industry. Sharing experiences, best practices, and innovative solutions can contribute to a more robust scouting network

Botrytis on foliage: secondary infection at various development stages

Botrytis canker on rose stem: note elongated brownish spot

across the Kenyan cut flower sector.

IV. Shaping the Future: Scouting as a Catalyst for Sustainable Growth. As Kenya's cut flower industry continues to expand, scouting remains a cornerstone of its growth and sustainability. To ensure its efficacy and relevance in the future, several strategies can be employed:

1. Capacity Building: Investing in training and capacity building for scouts and farm workers is crucial. Equipping them with the knowledge and skills to identify, document, and address issues is essential for effective scouting practices.

2. Technology Integration: Embracing digital solutions, such as smartphone apps, drones, and remote sensing technologies, can revolutionize scouting. These technologies can automate data collection, enable real-time monitoring, and enhance data analysis, ultimately improving the accuracy and efficiency of scouting.

3. Research and Innovation: Continuous research into emerging pests, diseases, and management strategies is vital. Collaborations between research institutions, government agencies, and the private sector can drive innovation in scouting techniques and pest management approaches.

4. Data-Driven Decision Making: Harnessing the power of data analytics and predictive modeling can empower growers to make informed decisions. By analyzing historical data and trends, growers can anticipate pest outbreaks and proactively implement control measures.

5. Sustainable Practices: Scouting should be integrated with broader sustainability efforts in the cut flower industry. This includes adopting practices that conserve resources, reduce chemical inputs, and minimize the environmental footprint of flower cultivation.

6. Policy Support: Government policies that incentivize and promote sustainable farming practices, including scouting, can play a significant role. Tax incentives, subsidies, and regulatory frameworks that encourage IPM adoption can contribute to the sector's long-term sustainability.

Scouting in cut flower growing is a vital practice that underpins the success of Kenya's thriving industry. Through vigilant observation, accurate documentation, and timely interventions, scouting enables growers to safeguard crop quality, enhance yield, and promote sustainable practices. Challenges such as labor intensity, evolving pest threats, and data management complexities must be met with innovative solutions, collaborative efforts, and a commitment to knowledge sharing.

By shaping the future of scouting through technology integration, research, and sustainable practices, the Kenyan cut flower industry can continue to flourish while minimizing its ecological impact. With scouting as a catalyst, the beauty of Kenyan cut flowers can continue to grace international markets while contributing to the nation's economic prosperity and environmental well-being.

PEST ALERT

FALSE CODLING MOTH (FCM)

One of the pest challenges currently facing flower producers in Kenya is the false codling moth (FCM), *Thaumatotibia leucotreta*. Growers have suffered financial losses due to quarantine restrictions and detection of a single larva can result in rejection of an entire consignment.

For proper control of FCM, it is desirable to use the yellow delta traps baited with a pheromone lure to monitor the extent and densities of this invasive moth pest. Visual inspection of plants involves looking out for signs of poor growth or rot; holes in flowers; adults hidden in foliage; and crawling larvae. Once the flower is damaged, it becomes vulnerable to fungal organisms that causes rots. Infestations can be identified by the brown spots and dark brown frass.

Current control of FCM in ornamentals consists of chemical application with Karate Zeon and Match, mating disruption using pheromones and biological control methods.

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Investing in 2024: The Road to Financial Success

Welcome to the exciting financial journey of 2024! It's a ride full of possibilities for savvy investors like you. Picture this: smart investing in 2024 goes beyond the usual. We're talking artificial intelligence, blockchain, and more! This guide is your ticket to manoeuvring through the financial twists and turns.

Here's the scoop: stay in the know, and adapt to trends. Think beyond the usual—sustainability and social responsibility are the new cool. With global shifts and tech magic, we'll show you how to ride the waves. Get ready for a ride where adaptability, innovation, and a bit of strategy lead the way. Let's dive into the world of smart investing in 2024!

Embrace Technological Innovation

In the fast-paced world of finance, technology is king. From blockchain to artificial intelligence, staying ahead of the curve is crucial. Look for companies leveraging cutting-edge technologies, which will likely be tomorrow's game-changers. Tech-driven investments provide growth potential and position your portfolio for resilience in an increasingly digital world.

Keep an Eye on Inflation

Inflation can erode the purchasing power of your money. In 2024, with economic shifts and changing policies, keeping a vigilant eye on inflation is crucial. Invest in assets that historically perform well during inflationary periods, such as real estate and commodities. By staying proactive, you can safeguard your portfolio against the erosive effects of rising prices. In addition to monitoring inflation, starting an emergency fund is essential. Step in achieving financial security.

Sustainable Investing: More Than a Trend

2024 marks a pivotal moment for sustainable investing. Beyond being a trend, it's a fundamental shift in how we approach investments. Companies focusing on environmental, social, and governance (ESG) principles are gaining traction. Not only does this contribute to a more sustainable future, but it can also result in robust financial returns. Invest with a conscience and watch your portfolio thrive.

Cryptocurrencies: Decoding the Digital Gold Rush

Cryptocurrencies continue to dominate financial conversations, and their influence is set to grow in 2024. While the market can be volatile, the potential rewards are substantial. Consider diversifying your portfolio with established cryptocurrencies like Bitcoin and Ethereum, but keep an eye on emerging players.

With proper research and risk management, cryptocurrencies can

be a lucrative addition to your investment strategy.

The Rise of Biotech: Investing in Health Innovation

Healthcare is undergoing a revolution, and biotechnology is at the forefront. With breakthroughs in genomics, personalized medicine, and cutting-edge treatments, the biotech sector offers significant investment potential. Identify companies making strides in medical innovation, as they will likely outperform in the long run. Investing in the health of the future can translate to robust financial gains.

E-Commerce Evolution: Beyond Traditional Retail

How we shop continually evolves, and e-commerce is central to this transformation. Look beyond traditional retail giants and explore opportunities in emerging e-commerce platforms. From innovative payment solutions to personalized shopping experiences, the e-commerce landscape is ripe with potential. By investing in companies driving the e-commerce evolution, you position yourself at the forefront of retail's future.

The Importance of Global Diversification

While focusing on emerging trends is crucial, consider the importance of global diversification. 2024 is a year where geopolitical events can significantly impact financial markets. Spread your investments across different regions and industries to mitigate risks. A well-diversified portfolio is a buffer against market fluctuations, ensuring stability in the face of global uncertainties.

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Financial Education: Your Best Investment

In the ever-changing world of finance, knowledge is power. Dedicate time to enhance your financial literacy in 2024. Stay informed about market trends, understand investment strategies, and know the potential risks. Attend webinars, read reputable financial publications, and consider consulting with a financial advisor. A well-informed investor is better equipped to make sound decisions and navigate the complexities of the financial landscape.

The Power of Dividend Stocks

In uncertain times, dividend stocks provide a stable income stream. Look for companies with a history of consistent dividend payments and a strong financial position. Dividend-paying stocks offer a source of passive income and cushion during market downturns. As you build your investment portfolio, consider the long-term benefits of incorporating dividend stocks into your strategy.

Regularly Review and Adjust Your Portfolio

In this dynamic financial landscape, consider incorporating income-generating assets into your strategy. Regularly review your portfolio, assessing financial goals and adapting, ensuring alignment with objectives amid market shifts. Stay agile, and be willing to reallocate assets based on conditions. A proactive approach to portfolio management ensures resilience and financial success.

Final Thoughts

As we invest in 2024, the key lies in staying informed, embracing innovation, and maintaining a proactive mindset. Whether it's diving into the world of sustainable investing, exploring the potential of cryptocurrencies, or tapping into the advancements in biotechnology, the opportunities are abundant. Remember, the road to financial success is dynamic, and by adapting to emerging trends, you position yourself for a prosperous future. Stay informed, stay engaged, and watch your investments thrive in the ever-evolving world of finance.

Tackling Mealybug Infestations for Optimal Cut Flower Cultivation

Cut flower cultivation is an art that demands meticulous care and attention to detail. Whether you are a professional floriculturist or an avid hobbyist, the joy of cultivating vibrant, blooming flowers is unparalleled. However, like any other form of agriculture, cut flower growing comes with its own set of challenges, and one persistent problem that often plagues flower growers is the infestation of mealybugs.

Mealybugs, members of the *Pseudococcidae* family, are small, soft-bodied insects that feed on the sap of plants. These pests can wreak havoc on cut flower crops, causing stunted growth, distorted blooms, and even transmitting plant diseases.

Understanding Mealybugs

Mealybugs are a common menace in horticulture, affecting a wide range of plants, including popular cut flower varieties. These tiny insects have a soft, cottony appearance, often resembling small tufts of cotton or white powder. Mealybugs feed on plant sap by inserting their needle-like mouthparts into plant tissues, extracting nutrients and causing damage in the process.

One of the challenges posed by mealybugs is their rapid reproduction. Female mealybugs can lay hundreds of eggs, leading to exponential population growth if left unchecked. Additionally, mealybugs excrete a sticky substance known as honeydew, which promotes the growth of sooty mold, further compromising the health of the host plant.

Identification of Mealybug Infestation

Early detection is crucial in managing mealybug infestations effectively. The signs of mealybug presence may vary depending on the species and the host plant, but some common indicators include:

Cottony Residue: The most apparent sign of mealybugs is the presence of a cottony, waxy substance on the plant. This residue can be found along stems, leaves, and in the leaf axils.

Stunted Growth: Mealybugs sap the nutrients from plants, leading to stunted growth and development. If your cut flowers are not reaching their expected size or are exhibiting abnormal growth patterns, mealybugs could be the culprits.

Distorted Blooms: Mealybug feeding can cause distortion in flower buds and blooms. Deformed petals and irregularities in flower structure are common signs of infestation.

Honeydew and Sooty Mold: The excretion of honeydew by mealybugs creates a sticky film on plant surfaces. This substance attracts sooty mold, resulting in black, powdery growth on leaves and flowers.

Effective Management Strategies: Controlling mealybugs in cut flower cultivation requires a multifaceted approach that combines cultural, mechanical, and chemical methods. Here are some effective strategies for managing mealybug infestations:

Cultural Practices

Sanitation: Maintain a clean and well-ventilated growing environment. Remove plant debris, fallen leaves, and weeds regularly to eliminate potential hiding spots for mealybugs.

Pruning: Regularly inspect and prune affected plant parts. Pruning can help remove mealybugs and their eggs, reducing the population and preventing the spread of infestation.

Biological Control

Predatory Insects: Introduce natural enemies of mealybugs, such as ladybugs, lacewings, and parasitic wasps. These beneficial insects feed on mealybugs and help keep their populations in check.

Mechanical Control

High-Pressure Water Spray: Use a strong stream of water to dislodge mealybugs from plant surfaces. This mechanical method is effective in reducing mealybug numbers, especially in the early stages of infestation.

Neem Oil and Insecticidal Soap

Neem Oil: Neem oil is a botanical insecticide that disrupts the feeding and reproductive processes of mealybugs. Regular applications can help control infestations while minimizing harm to beneficial insects.

Insecticidal Soap: Insecticidal soaps work by disrupting the cell membranes of mealybugs, causing them to dehydrate and die. These soaps are generally safe for plants and beneficial insects.

Systemic Insecticides

Systemic Products: Systemic insecticides are absorbed by the plant and circulate within its tissues. This makes them effective against mealybugs that are challenging to reach with contact insecticides. However, caution should be exercised to avoid harm to non-target organisms.

Ant Management

Ant Baits: Mealybugs are often tended by ants, which protect them from natural predators. Using ant baits can help disrupt this symbiotic relationship, reducing mealybug protection and making them more vulnerable to predators.

Quarantine and Inspection

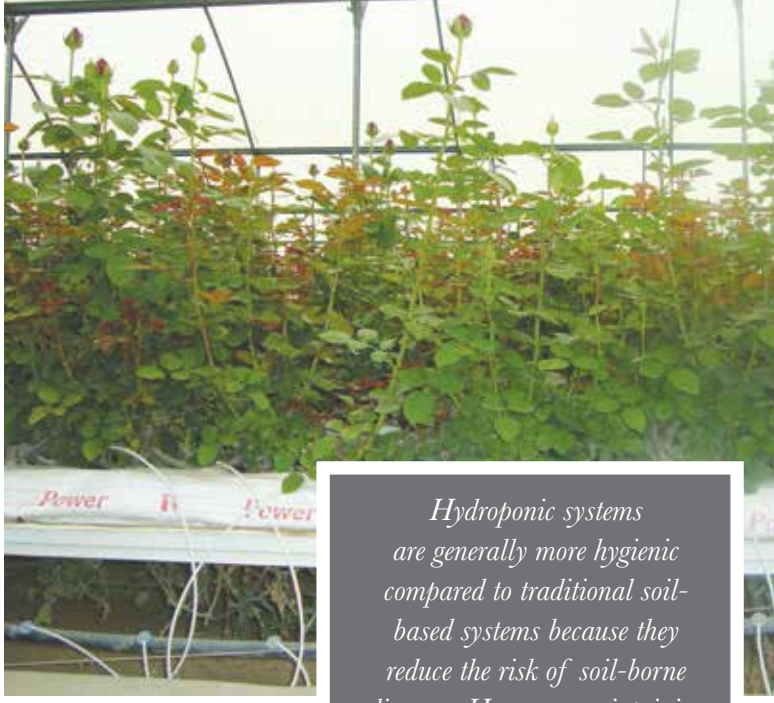
Quarantine New Plants: Before introducing new plants to your cut flower growing area, quarantine them and closely inspect for signs of mealybug infestation. This preventive measure can help avoid introducing pests to your existing crop.

Mealybugs pose a significant threat to the success of cut flower cultivation, but with proactive management strategies, their impact can be minimized. A combination of cultural practices, biological controls, and judicious use of insecticides can help keep mealybug populations in check while preserving the overall health of your flower crop.

In the pursuit of cultivating beautiful and healthy cut flowers, vigilance is key. Regular monitoring, early detection, and swift action against mealybugs will contribute to the sustainability and success of your flower-growing endeavors. By adopting an integrated pest management approach, flower growers can enjoy the rewards of a flourishing and pest-free cut flower garden.

Hydroponic and Substrate-Based Floriculture Nutrition: A Comparative Analysis

By Mary Mwende



Floriculture, has evolved significantly in recent years with the emergence of two distinct approaches: hydroponic and substrate-based systems. These methods offer unique advantages and require specialized nutrition management strategies to ensure the healthy growth and vibrant blooms of flowers. Hydroponic floriculture relies on a soilless environment, with essential nutrients delivered through precisely balanced nutrient solutions, while substrate-based floriculture employs solid, soilless substrates supplemented with additional nutrients.

Hydroponic Floriculture

Hydroponics is a soilless growing system where plants are cultivated in an inert medium, such as rock wool, coco coir, or perlite. These media serve as physical supports for plants, but they do not provide any nutritional value. In hydroponic floriculture, all essential nutrients are supplied through a carefully balanced nutrient solution.

Growing Medium: The growing medium in hydroponic systems is essentially an anchor for plant roots. It is chosen for its inert nature, moisture retention capabilities, and the ability to hold the plant in place. The absence of soil eliminates the risk of soil-borne diseases and pests, offering a more controlled environment for plant growth.

Nutrient Solution: The heart of hydroponic floriculture lies in the nutrient solution. This solution is a carefully calibrated mixture of essential macronutrients (nitrogen, phosphorus, potassium) and micronutrients (iron, zinc, manganese, etc.), dissolved in water. The nutrient solution is delivered directly to the plant roots through various hydroponic systems, such as drip irrigation, flood and drain, or nutrient film technique (NFT).

Hydroponic systems are generally more hygienic compared to traditional soil-based systems because they reduce the risk of soil-borne diseases. However, maintaining hygiene in the system is crucial. Regular cleaning and sanitation are necessary to prevent issues like algae growth in the nutrient solution, which can disrupt plant health.

pH and EC Control: One of the key aspects of hydroponic nutrition management is maintaining the pH and electrical conductivity (EC) of the nutrient solution within optimal ranges. Different plant species have specific pH and EC requirements, and these parameters need to be monitored and adjusted regularly. Deviations from the optimal pH or EC levels can lead to nutrient imbalances and deficiencies.

Precision and Control: Hydroponic systems offer a high degree of precision and control over nutrient delivery. Growers can easily adjust the nutrient levels to meet the specific needs of different plant varieties, leading to faster growth, higher yields, and improved crop quality. This level of control is particularly advantageous for commercial floriculture operations where uniformity and consistency are essential.

Hygiene and Disease Control: Hydroponic systems are generally more hygienic compared to traditional soil-based systems because they reduce the risk of soil-borne diseases. However, maintaining hygiene in the system is crucial. Regular cleaning and sanitation are necessary to prevent issues like algae growth in the nutrient solution, which can disrupt plant health.

Substrate-Based Floriculture

In substrate-based floriculture, plants are cultivated in solid, soilless substrates like peat, coconut coir, perlite, or a blend of

these materials. Unlike hydroponic systems, substrates do offer some initial nutrients and serve as a physical support for plant roots. However, they are generally not sufficient to meet the plants' nutritional requirements throughout their growth cycle, necessitating additional nutrient management.

Growing Medium: The substrate serves as both a structural support for the plants and a reservoir for water and nutrients. The choice of substrate can influence water retention and aeration characteristics, which in turn affect root health and nutrient uptake. Substrate-based systems strike a balance between the benefits of soil-based systems and the control offered by hydroponics.

Nutrient Management: While substrates provide some initial nutrients, these are typically insufficient for the entire growth cycle. Therefore, growers need to supplement the substrate with additional nutrients. This can be accomplished through the incorporation of slow-release or controlled-release fertilizers into the substrate or by periodic application of liquid fertilizers through irrigation.

pH and EC Considerations: Monitoring and adjusting the pH and EC of the substrate is important in substrate-based floriculture as well. The choice of substrate and the type of water used for irrigation can influence these parameters. While the pH and EC dynamics are generally less dynamic in substrates than in hydroponic systems, maintaining them within optimal ranges remains critical.

Watering and Drainage: Proper irrigation management is crucial in substrate-based floriculture. Overwatering can lead to waterlogged conditions, which restrict oxygen availability to the roots and can result in root rot. Adequate drainage is necessary to prevent such issues and ensure that the substrate remains well-aerated.

Nutrient Buffering: Substrates have the ability to buffer or retain nutrients to some extent. This provides a margin of safety against sudden nutrient imbalances and fluctuations. However, it also means that nutrient management may be less precise compared to hydroponic systems. Growers must be aware of the substrate's nutrient buffering capacity to avoid over- or under-fertilization.

In conclusion, both hydroponic and substrate-based floriculture have their unique advantages and challenges when it comes to nutrition management. Hydroponics offers precision and control, allowing growers to fine-tune nutrient delivery to meet the specific needs of plants. It also reduces the risk of soil-borne diseases and pests. On the other hand, substrate-based floriculture provides a balance between the structure of traditional soil-based systems and the controlled environment of hydroponics. The choice between these methods depends on various factors, including the specific plant varieties being grown, available resources, and the expertise of the growers. Regardless of the method chosen, careful nutrition management is essential for healthy and vibrant flowers.

2023 in Review: Top 8 News Impacting Africa's Fresh Produce Export Industry

The first half of 2023 witnessed a series of pivotal moments that set the course for the future of Africa's fresh produce export sector. From innovative freight solutions to lifting existing bans, the industry experienced significant events that had a lasting impact on its growth and performance in the years ahead.

New regulations imposed on Mango exporters in Kenya

From November 2023, mango exporters in Kenya were subject to stringent physical inspections of their mangoes before shipment, with the location of their packhouse being subject to inspections facilitated by The Agriculture and Food Authority Horticultural Crops Directive.

The measures came into place due to issues concerning mangoes being mixed with avocados during sea freight, which breached horticulture crop regulations. This action also came in response to the AFA's ban on October 31 to cease the delivery of avocados, which were being exported prematurely. AFA implemented a directive to physically inspect mango exports consignments after concerns that some exporters had been blending mangoes with avocados for sea shipments.

Tanzania's future for the export of local cashew nuts

With 10-15% of Tanzania's foreign exchange coming from cashew nut exports, Tanzania is claimed to be one of the largest cashew producers in Africa. Yet, only 5% of raw cashews are being processed locally, with 95% being exported for value addition to Vietnam and India, before reaching consumers in Europe and The United States. In September 2023, the government initiated new policies, ensuring all exported cashews are no longer raw and need to be processed by 2026.27, to benefit the farmers from value-added products and a premium price. From raw cashew nuts, Tanzania earned US$226.9M from exports in the 2022/23 fiscal year, however, new markets and prices can be tapped into through the processing of cashews.

Mangoes

Zimbabwe's citrus produce gains traction in China's markets

In January 2022, the two countries signed an export protocol agreement to export fresh citrus fruits from Zimbabwe to China. The agreement would allow fresh citrus including sweet orange, mandarin, grapefruit, lemon, and lime, to enter China. Further into 2023, on June 1st, the General Administration of Customs of China released the list of registered Zimbabwean orchards and packhouses for citrus exporting to China. On the 17th of October 2023, a local media outlet stated that according to Zimbabwe's Plant Quarantine Services Institute, a pilot phase was introduced in August, exporting 12 containers of citrus fruits, such as oranges, mandarins and grapefruit reaching the Chinese market, with 34 containers still in transit as of the 17th of October.

Since October 2023, Zimbabwe has exported several containers, with each container holding 24 tonnes of oranges, set for the Chinese market. Additionally, through mutual agreements with Chinese contacts, an

annual export quota has been quoted for 50,000 tonnes of citrus fruits, showing that earnings within Zimbabwean exporters are expected to rise further into the year.

The first consignment of Kenyan avocados leaves for India

Kenya has over 40 varieties of high-quality avocados and is ranked one of the largest avocado producers in the world. This milestone has allowed a bilateral trade agreement between Kenya and India, where avocado farmers can export produce to India.

The first shipment of avocados was sent on the 16th of September 2023, when 1.4 billion consumers were exposed to Kenyan avocados in Indian markets. Avocadoes are produced in small quantities in India, marking them as a non-commercial fruit crop. Due to low volumes, consumers are faced with high market prices, and therefore the importation of Kenyan avocados can lower prices and deepen market access of the fruit in India.

Port of Cape Town operations are creating concerns among local citrus growers

It was reported by EuroFruit in November 2023, that The Port of Cape Town's inefficiencies are impeding, which has arisen due to the lack of investment, coupled with poor maintenance of infrastructure. Yet, the Western Cape enters its peak export period of pears, stone fruits and grapes from November until May. Therefore, the deteriorating container terminal, that experienced breakdowns alongside rates of operations running 40% below their target, hampered the ability of exporters to meet international markets and their demands.

A strategic plan was to be implemented by South Africa's Public Enterprises Minister, with measures to improve efficiency, including; modifying truck operations and information sharing, enhancing terminal equipment and investment into infrastructure development whilst fostering closer collaboration between the public and private sector.

Kenya is the first EAC Member State to Sign a New Free Trade agreement with the EU

The recent approval of a trade pact between Kenya and the European Council made Kenya the only East African Community member state to have agreements with the European Union, which will grant them duty-free access to the EU. According to EU data, the union will become Kenya's second-largest trading partner, accumulating a respective Ksh512.6 billion (€3.3 billion) in 2022, which was an increase of 27% from 2018. January 2024 marks the beginning of the new trade deal where vegetables, fruits, tea, coffee and flowers will be amongst those being exported to the EU without quota restrictions.

After a two-month ban, Kenya's chilli exports to the EU have reopened.

Back in July, chilis from Kenya didn't meet the EU's strict phytosanitary standards therefore led to a two-month hold on exports. As of late last year, regular exports of chilis to the EU have been back on track.
To alleviate future export mediations, the EU donated KES3.1 million to go towards lab testing equipment. The equipment will authorize Kenya to meet the standards of the Global Good Agricultural Practices (Global GAP) in terms of pesticide residues and EU regulations.

In conclusion the second half of 2023 has been marked by transformative developments in Africa's fresh produce export industry. From the implementation of rigorous regulations, new markets, freight concerns, and ban-lifts. As we reflect on these key developments, it is clear that the fresh produce export industry in Africa is navigating a dynamic landscape, with both challenges and opportunities shaping its trajectory for the future.

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Hamish Ker

Appointed as Andermatt Kenya's CEO

Hamish Ker has been appointed as Andermatt Kenya's Chief Executive Officer, effective 1st December 2023.

"We have an opportunity to help our customers meet the demands of biological solutions and we are excited to welcome Hamish to the team!" the Andermatt team says. "We want to thank Stephen Musyoka, who has been instrumental in establishing Andermatt Kenya as a going concern since inception these past four years – as an early adopter and pioneer of biological farming solutions in Kenya."

"Stephen has assisted in positioning Andermatt business for future growth/ development in 2024 and beyond. We are grateful for Stephen's contributions to Andermatt and the impact we created together over the last four years. Stephen will take up a new role within the company as General Manager, Macrobial business. With the development of the Andermatt footprint in Kenya and the continued investment in our macrobial production capacity we are confident of the growing role Andermatt must play in the rapidly growing demand for Healthy Food and Healthy Environment for all!"

> *Andermatt Kenya's biological product portfolio blends well with small scale and subsistence growers, providing the 'glue' that ensures the country remains food secure. Together with the Kenyan government, great support is extended to this grower sector through small scale packs and application support.*

Andermatt's Journey in Africa

Healthy Food and Healthy Environment for all, speaks directly to Africa and her people.

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

South African based Andermatt Madumbi and Andermatt PHP, are recognised as well established, market leaders in the distribution and manufacture of quality biological solutions.

Andermatt Kenya

Andermatt Kenya joined the group in 2018. General Manager, Stephen Musyoka and his team have been committed to sustainability and proudly champion responsible growth

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of biological solutions in Kenya and surrounding growing areas.

Starting with a small team of five, focused predominantly on the production of macrobials, Andermatt Kenya today consists of more people with offices located in Nairobi and Naivasha. Key agricultural crops in this region include cut-flowers, mango and avocado. The team is however hugely committed to small scale growers.

Andermatt Kenya's biological product portfolio blends well with small scale and subsistence growers, providing the 'glue' that ensures the country remains food secure. Together with the Kenyan government, great support is extended to this grower sector through small scale packs and application support.
– Stephen Musyoka, Andermatt Kenya General Manager

Andermatt Mozambique

Andermatt Mozambique was founded in 2021 and has been trading from facilities in Southern Mozambique since early 2022. The small, dedicated team is led by Dr Michael Niland who, together with in-country distribution partners are committed to changing the mind-set of local growers to sustainable crop production using biological products.

The Andermatt network in Africa extends to an additional 4 countries in Central and Eastern Africa. Through strategic partnerships with leading agricultural distribution networks, the team is proud to offer growers quality biorational solutions in Zimbabwe, Namibia, Zambia and Malawi.

The Andermatt team in Africa, led by Business Development Manager Andre Fox, is committed to transferring knowledge locally to growers through technical guidance and application support, bringing the best the world has to offer in biological solutions.

Our vision is to partner with local governments, local regulatory bodies, distributors and growers to bring the best biorational solutions in growing Healthy Food in a Healthy

Environment, for all. This vision is twofold, local and global. Locally we will produce quality food and globally we will rise to meet the growing export market.
– Andre Fox, Andermatt Business Development Manager
Andre Fox

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

Andermatt in Africa is fuelled by integrity, passion, and innovation; delivering excellence for both the commercial and retail sectors. Andermatt in Africa is more than just a business, this is a deliberate purpose towards real food security and food safety. It is the knowledge that better soil, better crops and better food, builds a better future.

SOURCE: www.andermattafrica.com or www.andermatt.com

Navigating the Cold Chain with Temperature-Controlled Vehicles

The cut flower industry in Kenya is a thriving sector, with the country being one of the leading exporters of fresh flowers worldwide. The journey of these delicate blooms from Kenyan farms to international markets is a complex and delicate process, where maintaining the cold chain is of paramount importance. This entails the use of temperature-controlled vehicles to ensure that flowers are transported at optimal conditions.

The Importance of Temperature-Controlled Vehicles

Cut flowers are highly perishable, and their quality and shelf life are greatly affected by temperature fluctuations. To preserve their freshness and prevent wilting, it is essential to transport them in temperature-controlled vehicles, often referred to as refrigerated trucks or reefer trucks. These vehicles maintain a consistent and controlled environment, ensuring that the flowers remain at the ideal temperature and humidity levels throughout the transportation process.

Challenges in Flower Transportation

1.Temperature Variations

One of the primary challenges in flower transportation is maintaining the ideal temperature. Temperature fluctuations during transit can lead to the flowers wilting, which significantly reduces their market value. Kenya's flower industry relies heavily on exports, and flowers may travel long distances to reach their destination. Ensuring a stable temperature throughout the journey is essential.

2. Logistics and Infrastructure

Kenya's infrastructure and logistics capabilities are not always well-suited to the needs of the flower industry. Inadequate roads, traffic congestion, and delays in customs clearance can disrupt transportation schedules, potentially leading to temperature deviations.

3. Energy Costs

Running and maintaining temperature-controlled vehicles can be expensive, especially when considering the need for fuel or electricity to power refrigeration units. High energy costs can cut into profit margins for flower growers and exporters.

4. Environmental Concerns

The flower industry, like other sectors, is under increasing pressure to reduce its environmental impact. The use of refrigerated vehicles may contribute to greenhouse gas emissions and can be seen as an environmental concern.

Solutions in Flower Transportation

1. Advanced Temperature Monitoring and Control Systems

Innovation in temperature monitoring and control systems has been crucial in addressing temperature variations during flower transportation. Modern reefer trucks are equipped with state-of-the-art temperature sensors and control systems. These systems provide real-time monitoring and enable remote adjustments, ensuring that the flowers are transported at the desired temperature.

2. Pre-cooling Facilities

Pre-cooling is the process of lowering the temperature of flowers before they are loaded onto transportation vehicles. It is a critical step in maintaining the cold chain. Pre-cooling facilities in close proximity to flower farms help ensure that flowers start their journey at the optimal temperature. This reduces the strain on the reefer trucks during transportation.

3. Improved Logistics and Infrastructure

Efforts to improve the logistical aspects of flower transportation are ongoing. Investments in better road infrastructure, more efficient customs clearance processes, and coordination between different stakeholders in the supply chain all contribute to smoother flower transportation. Some flower farms have also developed their own dedicated logistics teams to ensure efficient transportation.

4. Sustainable Energy Solutions

To address the challenge of high energy costs and environmental concerns, the flower industry is exploring sustainable energy solutions for temperature-controlled vehicles. Some companies are transitioning to electric or hybrid refrigeration units, which reduce both operational costs and environmental impact.

5. Collaboration and Information Sharing

Collaboration and information sharing within the industry are vital to overcoming transportation challenges. Flower farms, logistics companies, and exporters are increasingly sharing data and insights about transportation routes, best practices, and challenges. This collaborative approach helps the industry as a whole to improve transportation efficiency.

6. Continuous Training and Education

Ensuring that all stakeholders in the flower transportation process are well-trained and educated on best practices is essential. Training programs and workshops are conducted to teach drivers, handlers, and other personnel how to operate and maintain reefer trucks, as well as the importance of the cold chain in preserving flower quality.

Innovative Reefer Truck Technologies

1. Smart Reefer Trucks

The introduction of smart reefer trucks has brought a new level of control and monitoring to flower transportation. These trucks are equipped with advanced sensors and connected systems that allow for real-time tracking of temperature, humidity, and other environmental factors. They can send alerts and data to a centralized control center, enabling immediate intervention in case of deviations.

2. Dual Temperature Zones

Dual-temperature zone reefer trucks are designed to carry different types of flowers with varying temperature requirements in a single trip. This innovation reduces the need for separate transportation for each flower variety, streamlining the supply chain and reducing transportation costs.

3. Energy-Efficient Refrigeration Units

Reefer truck manufacturers are focusing on developing energy-efficient refrigeration units. These units consume less fuel or

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electricity, reducing operational costs and minimizing the environmental impact. Energy-efficient technologies include electric standby options and advanced insulation materials.

4. Autonomous Transportation

While still in the experimental phase, autonomous or self-driving reefer trucks have the potential to revolutionize flower transportation. These vehicles can operate 24/7 without the need for rest breaks, increasing efficiency and reducing transportation times. However, regulatory and safety concerns need to be addressed before widespread adoption.

Impact of Solutions on the Flower Industry

1. Improved Flower Quality

The implementation of advanced temperature monitoring and control systems, as well as pre-cooling facilities, has significantly improved the quality and shelf life of Kenyan flowers. Customers receive fresher, longer-lasting blooms, enhancing the reputation of Kenyan flower exports.

2. Market Access and Growth

Efforts to improve logistics and infrastructure have expanded market access for Kenyan flower exporters. The industry can reach more distant markets, increasing revenue and driving growth. Improved transportation logistics also reduce the risk of flowers missing their scheduled flights or ships.

3. Reduced Costs and Waste

Sustainable energy solutions and energy-efficient refrigeration units have reduced operational costs for flower transportation. Additionally, dual-temperature zone trucks have streamlined the supply chain, minimizing waste and cost associated with separate shipments for different flower varieties.

4. Environmental Responsibility

Transitioning to sustainable energy solutions and reducing energy consumption in reefer trucks align with the flower industry's commitment to environmental responsibility. As consumers become more eco-conscious, this commitment can improve the industry's reputation and marketability.

Challenges and Solutions: A Global Perspective

The challenges and solutions discussed in this article are not unique to Kenya's flower industry but are applicable to the global flower trade. The transportation of cut flowers is a complex process, and the industry faces similar issues in maintaining the cold chain, regardless of location. Innovations in temperature-controlled vehicles and transportation processes can benefit flower industries worldwide.

The transportation of cut flowers from Kenyan farms to international markets is a complex and delicate process that relies heavily on temperature-controlled vehicles. Challenges such as temperature variations, logistics, energy costs, and environmental concerns have driven the development of innovative solutions within the flower transportation sector.

Advanced temperature monitoring and control systems, pre-cooling facilities, improved logistics, sustainable energy solutions, collaboration, and education have all played a role in enhancing the quality and shelf life of Kenyan flowers, expanding market access, reducing costs and waste, and demonstrating environmental responsibility.

As the flower industry continues to grow and adapt to changing consumer demands, the evolution of flower transportation solutions will be crucial in maintaining Kenya's status as a key player in the global cut flower market. With continued innovation and collaboration, the industry is poised for a bright and sustainable future.

"It Extends the Shelf Life of Roses by 50-100%"

Trials show that Florasys products extends the shelf life of roses by 50-100%, says Chanel Daniel-Swartland, Technical Affairs Manager at Tessara, a company that is one of the industry leaders in Sulphur dioxide generating products used for the preservation of fruits and vegetables. The Florasys products, which are recyclable and free of harmful chemicals, are now commercially available in East Africa and will soon be available in South America as well.

Florasys Box Strip and Wrap Florasys was first introduced to the market in 2020 as the Florasys Export Box Strip, used to preserve roses during export. In Jan 2023, Tessara (Pty) Ltd. released a second product under the Florasys brand called the Florasys Wrap. So, how does it work? Florasys products were scientifically formulated by a team of researchers for the preservation of cut roses. Its unique formulation releases sulfur dioxide gas under optimal conditions during transport and storage. Florasys Export Box Strip is placed in the corners of the box once the flowers are packed, and Florasys Wrap is an insert that is placed inside the SFK before bunching. Both products will release SO2 gas under conditions of high humidity. The SO2 acts on the surface of the roses to sterilize and prevent unwanted contamination and infection. This will ensure the best possible results. On top of that, the products are easy to use and safe to handle. And Florasys products do not contain any synthetic fungicides but can offer similar benefits."

Extending the shelf life of roses by 50 – 100%

Over 50 trials have been done in East Africa (Kenya) alone, and additional trials in South Africa and Ecuador are being conducted, explains

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> *"On top of that, the products are easy to use and safe to handle. And Florasys products do not contain any synthetic fungicides but can offer similar benefits."*

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Daniel-Swartland. “The trials show that Florasys products are between 50 – 100% effective on different rose varieties to extend the shelf-life of the roses. Detailed stats and an approved variety list are available on request from Tessara representatives.”

Commercially available in East Africa and soon in South America

To date, the products are under development with a selected group of growers in Kenya. “As product registration is in the process of being finalized, products are now commercially available in East Africa and will be available soon in South America.”

Florasys Export Box Strip is placed in the corners of the box once the flowers are packed, and Florasys Wrap is an insert that is placed inside the SFK before bunching. Both products will release SO2 gas under conditions of high humidity. The SO2 acts on the surface of the roses to sterilize and prevent unwanted contamination and infection.

Interest is rising

How did the demand develop since the introduction? Daniel-Swartland: “Initially, demand was slow. However, with the Floral industry moving towards eco-friendly, more sustainable solutions, interest in Florasys has been rising. Tessara has chosen to partner with growers who have this vision to be industry leaders as we roll out the use of Florasys to growers who see the potential of such a product. It’s eco-friendly, easy to handle, and is best practice for the flowers as the crop will get into the cold chain a lot quicker with less handling time.”

A sea freight solution for roses?

“Florasys products were initially created to be used under conditions for air freight. A lot has happened during the last few years, and the need for sea freight is a hot topic. Interestingly, Tessara’s product offerings on other (fruit) commodities are all compatible for sea freight. So while there isn’t a current sea freight solution for roses, the R&D scientists are working on one for the future.”

Exciting times ahead

When looking at the years to come, Daniel-Swartland foresees a bright future for Florasys products. “Exciting times are ahead for Tessara and the Florasys range of products. These products enter the market at a time when rules and regulations are changing globally, and environmental considerations like recycling and reducing carbon footprint must be looked at.

Florasys products fit into this narrative as they are recyclable and free of harmful chemicals.” And they are eager to grow. “Tessara is committed to engaging with our clients to address needs that the industry has. With that in mind, the Florasys range of products will continually grow to encompass such requests from the industry. “

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Blooming Prospects For Kenyan Flowers

The Winchester farm in Kenya's Nakuru County is the source of some of the most vibrant shades of roses from East Africa, ranging from scarlet red and vivid white to bright yellow bouquets.

The flowers can now reach the Chinese market in just 17 hours, compared with three days in the past, thanks to express air delivery and simplified customs inspections.
Kenya, which is Africa's largest exporter of flowers to China, exports a total of about 210,000 metric tons of flowers each year, according to the latest figures released by Kenyan authorities. It is the world's fourth-largest exporter of cut flowers.

The Winchester farm, run by Mzurrie Flowers, one of the more than 300 flower companies in Kenya, exported cut flowers worth millions of dollars last year.

Most exports have traditionally been to Western Europe. However, the entry of the Chinese market, which is growing by around 8 percent annually, has been a shot in the arm for the industry, according to the Kenyan Agricultural Ministry.

Gerald Kipkosgei, a technical specialist at the Winchester farm, said that various techniques are used to attain the high standards necessary for the flowers to be acceptable in markets such as China.

"We utilize state of the art technologies in production, harvesting and post-harvest.After harvest, we employ precooling, cold storage facilities, grade, bouquet etc. The farm is doing fertilizer recycling systems to prevent wastage." he said.

He added that the farm is currently eyeing further measures to increase the competitiveness of Kenyan flowers in the global market.

"We have moved into the space of value addition where we can finish the bouquets here, ready to go to the end buyer," Kipkosgei said.

Over the past decade, the cut flower industry has been thriving in Africa with the European Union offering the largest market for the continent's cut flowers. Kenya, Ethiopia and South Africa are the leading African nations in flower exports.

The growth of the Chinese market is promising to give Africa's floriculture a much-needed boost with its huge demand for the continent's flowers. An upturn in global flower production has pushed African countries to seek new markets, and China has recently emerged as a potential destination for high-value roses.

Previously, Kenyan flowers reached the Chinese market after passing through the Dutch flower auction, making them very expensive.

Clement Tulezi, chief executive officer of the Kenya Flower Council, said that Kenyan flower exporters plan to open a cut flower center in Beijing to deal with the Chinese market demand.

Tulezi said his organization was in the process of establishing the Asian Flower Association, which will be headquartered in Beijing and wholly owned by Kenyan exporters, who will be registered in the Chinese capital.

"I can confidently say that the Chinese market has proved to be lucrative for Kenyan flower farmers, and the rising demand in China for cut flowers may overtake our supply. The proposed association will deal with both supply and demand," he said.

"The Chinese market is growing faster than we can catch up. The new cut flower center will help satisfy the needs of our Chinese customers."

BRI boost

Under the framework of the China-proposed Belt and Road Initiative, Kenya's flower exports to China have been greatly boosted in the past decade. Kenya and China signed bilateral agreements in June last year to eliminate many trade barriers.

These included the scrapping of a number of tariffs and value-added tax, creating room for the flower trade to flourish. In addition, direct flights between Kenya's capital Nairobi and Changsha in Hunan province have increased to two per week since April.

"The floriculture industry is a huge employer and one of the biggest foreign exchange earners for Kenya. It has been tough in the past couple of years because of the cost of input and freight, and the cost-of-living crises here and in Europe, but the Kenyan floriculture industry is in a great place," Tulezi said.

With Kenya being the highest producer of cut flowers in Africa, access to the Chinese market is bound to bring good tidings for the continent's floriculture, as reflected in predictions by United States research company Mordor Intelligence.

According to the company's forecasts, the size of Kenya's floriculture market is expected to grow from $1.04 billion this year to $1.34 billion by 2028. "Roses have the potential for expansion in Kenya's floriculture owing to reasons such as large production acreage, stable production throughout the year, and the fact that cultivators have established a high standard of procedures for producing high-quality roses. This should be boosted along with high demand from international markets," the report said.

Mr. Clement Tulezi, CEO Kenya Flower Counci

The Importance of Transpiration

By Erik Runkle

Transpiration is the process of water movement from the roots to the shoots of plants. Just like photosynthesis and respiration, it is a requisite function for plant growth. As boring as transpiration may sound, understanding the process can provide fundamental insights into successful crop production.

Water and Nutrient Uptake

Water is absorbed as a liquid by roots, moves through the stems and leaves, and is lost as a vapor through very tiny openings on leaves called stomata. This transpiration process is passive, meaning it doesn't require energy. Instead, the driving force for water movement is from the difference in water potential between the root zone and the atmosphere. The evaporation of water from leaves has the greatest impact on the rate of water uptake and movement through the plant. Minerals are dissolved in water and together, they move from the roots to the shoots. Therefore, nutrient uptake relies upon water uptake, which relies upon a healthy root system and a driving force for evaporation. When water uptake is slowed, such as from insufficient water in the substrate, a poor root system, or high humidity (low vapor-pressure deficit, or VPD), nutrient uptake is simultaneously decreased.

Evaporative Cooling

There are similarities between transpiration in plants and respiration, or sweating, in people. Just like people lose water through their bodies to cool themselves, plants "sweat" to cool their leaves. We sweat more, or lose more water, when the air is dry — high VPD — and when it's sunny. Plants are the same; they lose more water as the VPD increases and as the amount of energy incident upon a leaf — from the sun or electric lamps — increases. If a plant or plant part does not adequately transpire water, it can overheat under high light and kill plant tissues.

Importance of Transpiration

The process of transpiration controls water and nutrient uptake as well as leaf and plant temperature. When water loss through the leaves begins to exceed what the roots can supply, plants respond by closing their stomata to limit water loss. When this happens, nutrient uptake slows down, plant temperature increases and uptake of carbon dioxide (CO_2) decreases. Therefore, a water stress of any kind can decrease transpiration and slow down plant growth.

Relevance of VPD

VPD is the preferred way to quantify the driving force for water loss. At a very low VPD (less than 0.3 kPa), transpiration is slow because the driving force for water movement from the roots to leaves is slow. This is desirable during propagation of cuttings but not when plants have a well-developed root system. In contrast, at a high VPD (greater than 1.5 kPa), transpiration rate is high, which isn't necessarily bad unless root uptake cannot meet the large amount of water lost through the leaves. When the transpiration rate cannot keep up, stomata close to limit water loss and the growth rate slows down. Therefore, in many controlled-environment production situations, a target VPD is between 0.5 and 1.5 kPa so that there is adequate but not excessive movement of water and nutrients through the plant via transpiration.

Influence of the Root Zone

Factors that limit the root uptake of water (and nutrients) limit transpiration. This can include inadequate moisture content of the substrate, excessive fertility or high salt content, a poorly developed root system, or a root pathogen such as pythium or rhizoctonia.

Influence of the environment

In addition to VPD, the rate of transpiration can increase as drying conditions increase such as increasing temperature (which increases the VPD), light intensity and wind speed. High temperature and light intensity increase leaf temperature, which necessitates more evaporation of water to cool its surfaces. A high wind speed decreases the boundary layer around plants and thus increases the rate of leaf water loss.

Finally, a high concentration of carbon dioxide (CO_2) in the air can decrease transpiration, since stomata don't need to open as much for CO_2 uptake. To conclude, management of the root zone and the growing environment controls transpiration, which ultimately regulates crop nutrition and plant growth. Except in specific situations (such as propagation), ultimately we want to provide the cultural and environmental conditions that lead to adequate but not excessive water uptake to promote growth and nutrient uptake.

Erik Runkle is professor and floriculture extension specialist in the department of horticulture at Michigan State University. He can be reached at runkleer@msu.edu.

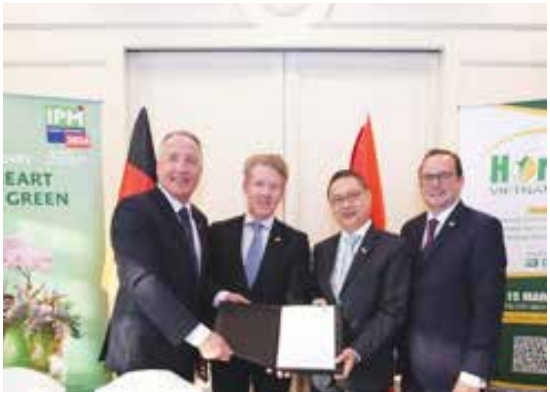
IPM ESSEN and HortEx Vietnam Enter into Partnership

The International Plant Fair is breaking new ground. IPM ESSEN will exclusively take over the marketing of the Vietnamese horticultural trade fair HortEx in the DACH region and other nations. The world's leading trade fair for horticulture is thus expanding its international network to include another future market. Due to increasing urbanization, the demand for flowers and plants in Southeast Asia is also growing.

The Dutch company Nova Exhibitions B.V. and its Vietnamese partner Minh Vi Exhibition & Advertisement Co., Ltd. are the organizers of HortEx Vietnam. The next edition will take place from 13 to 15 March 2024 at the SECC Saigon Exhibition & Convention Center in Ho Chi Minh City. IPM ESSEN will exclusively manage the acquisition of exhibitors from the DACH region and other nations with high relevance in the global horticultural market, such as Italy and Ecuador. In addition, a Memorandum of Understanding states that the parties are aiming for a long-term partnership beyond 2026.

"We are very pleased that we have succeeded in taking a further step towards the internationalization of the world's leading trade fair for horticulture. With this cooperation, we are demonstrating our presence in a rapidly growing market and enabling companies from Germany, Austria and Switzerland in particular to establish new contacts and business relationships," said Oliver P. Kuhrt, CEO of Messe Essen, at the signing of the cooperation agreement.

Thanks to increasing environmental awareness, a growing middle class and an increased demand for fresh, local produce, numerous opportunities are opening up for the horticultural industry in Vietnam. The horticultural market in Vietnam is growing at an average annual rate of eight percent, and the export rate of horticultural products from Vietnam has doubled in the last five years.



The contract was signed as part of a business delegation trip on the occasion of the Metalex metalworking trade fair, which was also attended by the Chairman of the Supervisory Board of Messe Essen, Thomas Kufen: "The course has been set for a fruitful, long-term cooperation between IPM ESSEN and HortEx.

Messe Essen is once again expanding its global network and carrying the name of the city of Essen into the world. I therefore support the new partnership out of conviction."

About the HortEx Vietnam

Vietnam, a country known for its breathtaking natural beauty and rich agricultural culture, is well on its way to becoming one of the emerging forces in the horticulture industry. The new cooperation between IPM ESSEN and HortEx comes at the right time to promote this development and create growth opportunities for the industry. HortEx has been held in Vietnam's economic centre Ho Chi Minh City as an important horticultural trade fair since 2018. Most recently, it attracted 200 exhibitors and around 5,700 trade visitors to the SECC. In addition to plants and horticultural technology, the range also includes fruit and vegetables.

The trade fair provides access to a market with a future: Vietnam has significantly increased its exports of horticultural products in recent years. These include fruits, vegetables, flowers and ornamental plants. Exports to countries such as China, the USA and Japan have grown strongly. The demand for organic horticultural products, especially fruit and vegetables, has also increased.

Consumers in the Southeast Asian coastal state are increasingly looking for healthy and sustainable food, while at the same time there is a growing awareness of environmental issues and sustainable horticulture. This is also reflected in the increased use of environmentally friendly cultivation methods and technologies.

The State of the Global Fresh Produce Industry

At IFPA's Global Produce and Floral Show 2023 in Anaheim California, the fresh produce industry gathered to network, learn, inspire and to discuss the state of the fresh produce industry. Globally, the industry faces many challenges at present as weather extremes, geopolitical tensions and the ever-decreasing and more expensive workforce is affecting players along the fresh produce supply chain. Luckily, with the numerous technological innovations and exciting new products being developed, the future remains full of opportunities for the fresh produce industry.

Navigating between greater uncertainty and higher quality

Weather extremes are the talk of the town

The many weather extremes affecting supplies and prices around the world, were one of the main topics of discussion at the IFPA2023 (International Fresh Produce Association's Global Produce and Floral Show 2023). Some of the many fruits impacted by recent weather disruptions are blueberries, table grapes, and stone fruit. While visitors of the show were offered a range of the finest berries, blueberries were absent in many US supermarkets during the month of October. After years of growth, Peru's shipments have declined significantly in the marketing year 2023/24 due to a warm winter that negatively impacted yields. While this is one of the many outcomes of El Niño, in the longer run, the industry expects continuing growth in blueberry exports.

The quality bar for berries has been raised

As the speed of demand growth in the main markets – the US and the EU –slowed down in recent years, quality has become more important. At the show, various blueberry players showed their new bigger blueberries. Jumbo-size berries are expected to quickly gain market relevance, not only because of consumer preferences, but also due to efficiency gains and reduced production and harvesting costs. For strawberries, quality was also a feature at the show. Most striking were the various branded greenhouse-grown strawberries exhibited. In contrast to Europe, greenhouse-grown strawberries are a fairly new phenomenon in the US, gaining ground quickly.

Greenhouse tomatoes as the stars of the vegetables show

Greenhouse-grown produce was prominently present at IFPA2023. Mexican, US, and Canadian companies, many of them with facilities or suppliers in all three countries, showed various new varieties, snack-size vegetables and packaging. North-America's largest greenhouse player, Sunset, showcased so-called "Umami Bomb" tomatoes in Japanese-inspired packaging. While another player, Windset, showed sweet snack tomatoes called "yum yums" in red/pink candy-style packaging.

Nature Fresh featured its dark-brown "Yoom" tomatoes, of which the crown of the tomato is star-shaped. Prepared packaged salads were also present in all shapes, sizes and packaging, including various high-tech indoor-

farmed leafy greens that are currently facing a reckoning.

Automation is gaining steam

In the long term, it does seem that leafy green production and processing will also be more automated, despite the current challenges for high-tech grown greens. Just like many other fruit and vegetable industries, the costs and availability of labor, as well as more limited water availability and/or more stringent sustainability requirements are challenging. At the same time, consumers demand an ever-higher quality. Automation can be a solution for some of these issues and we saw many interesting demonstrations of this at IFPA 2023. Automation solutions ranged from robotic harvesters for strawberries and tomatoes, to extremely advanced sorting equipment for fruits, to technologies for assisting pollination in avocado, blueberry, and almond production.

According to some industry sources, the payback period for some robotic packaging or sorting equipment is currently less than one year. Also presented were various solutions to reduce food waste, including fruit coatings to increase shelf life and an in-retail scanner to determine the ripeness of avocados, preventing consumers from squeezing the fruit until it is unsellable.

Nuts at your convenience

With California at the centre of global almond and pistachio production, it was no surprise that tree nuts were omnipresent at the produce show hosted there. As demand is no longer outpacing supply, suppliers are putting more effort into marketing almonds, pistachios, and walnuts, for example by adding all kinds of flavors and offering various pack sizes. Visitors of the show were bombarded with flavored pistachios, from very sweet to extremely spicy. We also saw lots of unshelled pistachios, as the convenience trend seems to be unstoppable, even in a year with strong economic headwinds.

Exotic species are mushrooming

In the mushroom space, suppliers are also seeking differentiation. Mushroom suppliers showed broad assortments of exotic mushrooms at the show, both conventionally and organically grown. Different sizes, colors, and packages of oyster mushrooms, shiitake, enoki-take, and maitake were exposed. According to the USDA, the sales value of commercially-grown specialty mushrooms went up 3 percent in 2022/2023 YOY.

Floral sales dependent on purchasing power

A sector that is usually very much related to economic conditions is the floral industry – at least, during 'normal' circumstances. In the very abnormal situation during the Covid pandemic, floral sales reached highs, both in the US and Europe. In the course of 2022, consumers' purchasing power came under pressure due to inflation. For US retail, Circana data on the 52-week retail sales of flowers (until August 13, 2023) showed a 3.2% decrease in units year-on-year. As prices went up, sales increased by 2.9% YOY.

Flower wholesalers at the show were nevertheless optimistic about the forthcoming winter, with good sales opportunities for All Saints Day, Thanksgiving, Christmas, and – of course - Valentine's Day.

Summer Flowers Bandwagon....

Kenya's flower industry has long been known for its significant contribution to the global floral export market, primarily centered around the cultivation of roses and other flowers that thrive in the country's mild and favorable climate. However, there's currently a noticeable shift occurring within the industry as Kenya embraces the cultivation of summer flowers, marking a promising expansion in its floral portfolio. Thanks to its abundant sunshine and conducive climate, Kenya is now venturing into year-round summer flower cultivation.

The remarkable growth of Kenya's flower industry can be attributed to a combination of factors, including the country's climate, fertile soils, and the dedication and expertise of its flower growers. Historically, the industry's focus has revolved around flowers such as roses, carnations, and lilies, with roses taking a dominant position. Nonetheless, the landscape is evolving as an increasing number of small-scale growers recognize the beauty, quality, and profitability of summer flowers, which can complement traditional rose bouquets. Unlike Northern Europe, where summer flowers are typically grown during the summer months, Kenya's climate allows them to thrive throughout the year.

> *"Summer flowers often command premium prices due to their uniqueness, making them a lucrative niche for Kenyan farms. The ability to cultivate them in open fields with minimal requirements further enhances their appeal. This adaptability and profitability are highly attractive to growers in Kenya."*

The impetus behind the cultivation of summer flowers in Kenya is palpable, with growers increasingly drawn to these captivating blooms.

This shift is motivated by several key factors. Growers are diversifying their product offerings to meet the changing demands of international markets. By incorporating summer flowers into their portfolios,

Kenyan flower farms gain a competitive edge within the global industry.

Additionally, the year-round growth cycle enables them to extend production beyond the limitations associated with traditional flowers. This, in turn, helps meet the demand for floral arrangements during seasons when roses are less abundant in their destination markets.

Summer flowers often command premium prices due to their uniqueness, making them a lucrative niche for Kenyan farms. The ability to cultivate them in open fields with minimal requirements further enhances their appeal. This adaptability and profitability are highly attractive to growers in Kenya.

Summer flowers come in a wide array of enticing varieties, contributing a unique touch to floral designs. These blooms are increasingly favored by small-scale growers as they are easier and more cost-effective to cultivate and manage compared to roses, which often require greenhouse conditions and large-scale operations.

Some of summer flowers cultivated in Kenya include ornithogalum, statice, craspedia, gomphocarpus ('moby dick'), eryngium, bupleurum, ammi majus, zinnia, scabiosa, cosmos, dahlia, marigold, helianthus (sunflower), dianthus (carnation), lily, gladiolus, anigozanthos (kangaroo paw), and alstroemeria, among others. This diverse range of summer flowers is transforming Kenya into a dynamic and thriving player in the global floral industry.

The Kenya Flower Council (KFC) plays a pivotal role in supporting the small-scale growers by assisting them in achieving certifications and meeting international standards. They also facilitate connections to global markets, empowering these emerging growers to participate in the trend of cultivating summer flowers.

Summer flowers cultivated in Kenya include ornithogalum, statice, craspedia, gomphocarpus ('moby dick'), eryngium, bupleurum, ammi majus, zinnia, scabiosa, cosmos, dahlia, marigold, helianthus (sunflower), dianthus (carnation), lily, gladiolus, anigozanthos (kangaroo paw), and alstroemeria, among others.

Hass avocado trees from Hass seeds?

An avocado tree farmer explains the science of Hass avocados.

Did you know this? Have you ever seen anyone put an avocado pit in water to grow an avocado tree?

I've seen lots of people try, but only a few succeed. My mom has a tiny avocado tree growing in her living room that she managed to grow from the pit of a Hass avocado she ate. It's small but thriving, and I've often wondered if it will ever grow actual avocados.

As it turns out, it could—but they won't be Hass avocados.

Wait, huh?

In a wow-that's-an-interesting-factoid-I-never-knew-before video, an avocado tree grower explains in this YouTube video why a Hass avocado seed doesn't grow into a Hass avocado tree. Avocados, apparently, are not "true to seed" plants, meaning if you plant the seed, you'll end up with a different variety of the fruit the seed came from.

Apples are the same—if you plant a Fuji apple seed, you will not get a Fuji apple tree. In fact, chances are really, really high that you'll get an avocado or an apple that tastes terrible if you try to grow it from a seed of an existing fruit.

The guy from Sleepy Lizard Avocado Farm explains how it all works using an analogy with candy flavors. This is the genetics lesson we all needed in school when we were trying to figure out Punnett squares, and he explains it all so clearly. Incredible how nature works, and so amazing what human beings have been able to figure out over millennia of agricultural advancements.

So how do you get a Hass avocado tree if you can't plant a Hass avocado seed to grow it? As he explains in the video, you can plant the pit and start to grow the tree, but if you want Hass avocados you have to graft a branch of a Hass avocado tree onto the stem of the tree you're growing.

Or, you can just buy a baby Hass avocado tree that's already been grafted, which is probably a heck of a lot easier than figuring out how to graft one yourself. So go ahead and sprout that seed in water and grow yourself a pretty avocado plant if you'd like. Just don't expect any yummy avocados from it, since your chances are about 1 in 10,000 that it'll happen.

Ethiopia's flower industry Challenge

Ethiopia is known for its colourful and fragrant flowers, which it exports to the world. Its horticulture sector is the world's fifth-largest. But it's facing a major crisis due to the escalating violence in the northern Amhara region. The conflict, which pits federal troops against local militias, has disrupted the operations of many flower farms, threatening their productivity and profitability.

Ethiopia's flower industry generated over $650 million in revenue in 2022, according to the country's horticulture association. The bulk of its exports are fresh-cut roses, which are in high demand for occasions like Christmas, and Valentine's Day in Western countries. Last year, Ethiopia exported millions of kilograms of flowers to the European market during Valentine's Day alone. The peak season for flower exports runs from December to June. But this year, it may be severely affected by the conflict in the Amhara region, which is home to many flower plantations.

Violence has engulfed the Amhara region since August, when local militants launched a rebellion against the federal government, accusing it of marginalizing and oppressing the Amhara people. The federal troops have responded with a fierce crackdown, resulting in hundreds of deaths and thousands of displacements. The conflict has also disrupted the supply chains, transport networks, and security of the flower farms, forcing many of them to halt or reduce their activities. The Amhara regional government said it had lost up to $45 million, mostly from flower exports, alongside massive layoffs, since the start of the conflict.

The flower industry is one of the pillars of Ethiopia's economy, and a key part of its Growth and Transformation Plan, which aims to make the country a middle-income economy by 2025. The plan involves attracting foreign investors and industries, such as European flower companies, by offering them incentives such as duty-free access, loans, and subsidized electricity and water. The goal is to create jobs and reduce poverty for Ethiopians, who mostly rely on agriculture for their livelihoods.

The Ethiopian flower export business has witnessed a sharp growth in the last decade, with some of the world's best flower companies operating farms across the country. These companies benefit from the favourable climate, fertile soil, and low-cost labour that Ethiopia offers. However, they also face various challenges, such as shortage of foreign currency, political instability, and human rights violations.

In the last three years, some of the leading foreign investors in meat and textile export businesses have exited Ethiopia due to these issues, as well as the country's ejection from the Africa Growth Opportunity Act (AGOA), a trade pact with the United States that grants preferential access to African products. There is fear that the flower farmers might follow suit, especially if the conflict in the Amhara region persists or worsens.

Conflicts often throw vital economic sectors off balance, and Ethiopia has had an unhealthy dose in recent years. In 2016 and 2020, at the height of the political crisis and uprising against the government in Addis Ababa, several flower farms in the Oromia region were destroyed and forced to close shop temporarily. The Oromia region is another hotspot of ethnic tension and violence in Ethiopia, where the Oromo people, the largest ethnic group in the country, have been demanding more autonomy and representation. The Oromia region is also the primary source of Ethiopia's coffee exports, another vital sector.

https://venturesafrica.com/

FLOWER & VEGETABLE FARMS IN KENYA

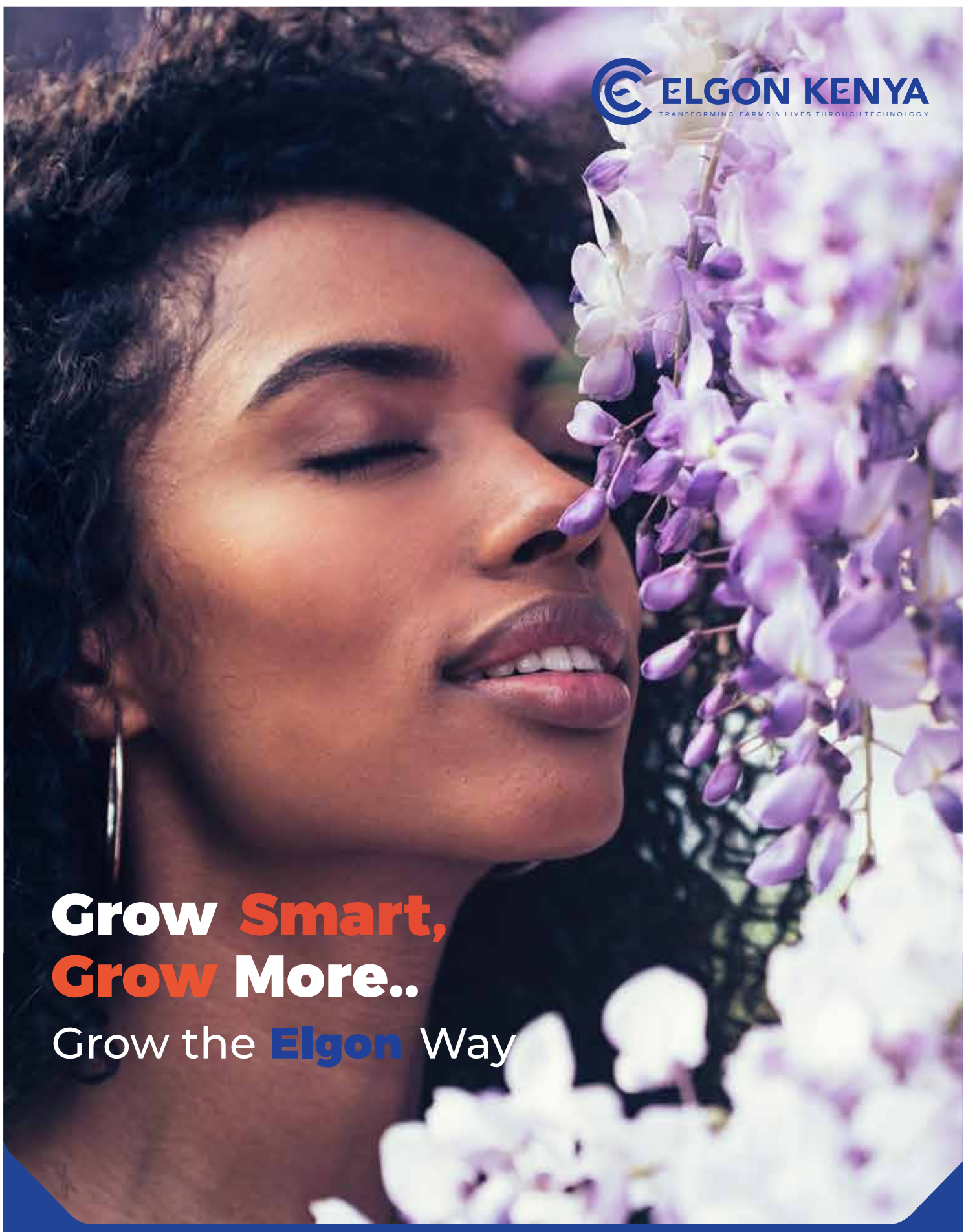
FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
AAA- Flowers-Simba	Roses	Rumuruti	Sanjeev	0739360050	sanjeev@aaagrowers.co.ke
AAA- Flowers -Chui Farm	Roses	Timau	Phanuel Ochunga	07522506026	fanuel.ochunga@aaagrowers.co.ke
AAA-Simba Farm	Roses	Rumuruti	-	-	-
Across Agriculture Ltd	Herbs	-	Emily Chepkemoi	0729080186	chep28@gmail.com
Africalla Kenya Ltd	Cuttings	Eldoret	Meindert	-	meindert@africalla.com
Africa Blooms	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Agriflora (K) Ltd		Nakuru, Njoro	Charles Mulemba	0721311279	cmulemba@sianflowers.co.ke
Aquila Development Co	Roses	Naivasha	Prashant Takate	0799356002	gm@aquilaflowers.com
Baraka Roses/ Mumi Flora	Roses	Ngorika	Paul Salim	0746766638	-
Batian Flowers	Roses	Nanyuki	Rakesh	0724631299	
Beautyline	Flowers	Naivasha	Peter Gathiaka	0721392559	peter@beautyli.com
Big Flowers	Roses	Timau	Gideon Waweru	0721178974	gideon@fontana.co.ke
Bigot Flowers	Flowers	Naivasha	Kakasaheb Jagtap	0722205271	jagtap.kt@bigotflowers.co.ke
Bila Shaka Flowers	Roses	Naivasha	Joost Zuurbier	0722204489	bilashaka.flowers@zuurbier.com
Bohemian	Flowers	Nakuru	Thambe Sabaji	0734 740202	-
Black Petals	Roses	Limuru	Nirzar Jundre	0722848560	nj@blackpetals.co.ke
Black Tulip- Lemotit	Flowers	Kericho	Yogesh	0715817369	-
Bliss Flora Ltd	Roses	Njoro	Appachu Sachin	0789101060	appachu7@yahoo.com
Bloom Valley	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Blooming Dale Roses Kenya Ltd	Roses	Nanyuki	Sunil	0718991182	info@bloomingdaleroses.com
Blooming Africa	-	Gilgil	Bert	0722204309	bert@blooming-innovations.com
Buds and Blooms	Roses	Nakuru	Shivaji Wagh	0720895911	shivaniket@yahoo.com
Carzan (K) Ltd KS	Summer flowers	Salgaa	Stanley Rotich	0721931710	stanley.rotich@marginpar.biz
Carzan (K) Ltd ST	Hypericum, solidago	Sobea	Thaddeus Adung'o	0716019094	thaddeus.adung'o@marginpar.biz
Carzan - Molo	Carnations	Molo	Charles Chelule	0728784081	charles.chelule@marginpar.biz
Chestnut	Vegetables	Naromoru	Gabriel Kiai	-	gabriel.kiai@aaagrowers.co.ke
Colour Crops	Hypericum	Nanyuki	Kennedy Wanyama	0716389472	colourcrops@tmu.com
Colour crops	Summer Flowers-	Bahati	Patrick Kipkurui	0727806184	bahati@colourcrops.com
Colour crops	Flowers	Naivasha	Geoffrey Mwaura	0722200972	nva@colourcrops.com
Credible Blooms	Flowers	Rumuruti	Eliud Njenga	0722382859	eliud@pigeonblooms.com
Dale Flora	Roses	Mogotio	Brijesh	0715469732	-
Desire Flowers	Flowers	Isinya	Rajat Chaohan	0724264653	rajatchaohan@hotmail.com
De ruiters	Breeder Roses	Naivasha	Ethen Chege	0720477717	-
Dummen Orange	Flowers Breeders	Naivasha	Bart Engels	0759069896	b.engels@dummenorange.com
Eco Roses	Roses	Salgaa	Madhukar Bhalerao	0799555440	Mbhalerao.eco@btfgroup.com
Elbur flora- kimman	Roses	Nakuru	Daniel Moge	0721734104	kimmanexp@gmail.com
Enkasiti Thika	Flowers	Thika	Satish	0735270236	enkasiti@gmail.com
Equinox	Flowers	Nanyuki	Harry Kruger	0707266956	harry@equinoxflowers.com
Everest Flowers Ltd	Flowers	Mt. Kenya	Japheth Chelal	0721770597	-
Everflora Ltd.	Flowers	Thika	Ghanshyam Dusang	0721638005	manager1@everflora.co.ke
Evergreen Crops		Nairobi	Arun Singh	0721941009	arun@evergreencrops.com
Exotic	Roses/ Carnations	Athiriver	Peninah Shimon	0737626533	-
Fairy Flowers	Flowers	Limuru	-	-	-
Fides Kenya Ltd	Cuttings	Embu	Jan Molenaar	0733331580	-
Fontana Ltd - Akina farm	Roses	Njoro	Mahendra Patil	0798254199	mahendra@fontana.co.ke
Fontana Ltd - Ayana Farm	Roses	Mau Narok	Osman	0712933710	osman@fontana.co.ke
Flamingo Horticulture Farm	Flowers	Naivasha	Peter Mwangi	0722204505	peter.mwangi@flamingo.net
Flamingo -Kingfisher Farm	Flowers	Naivasha	Jacob Wanyonyi	0722773560	jacob.wanyonyi@flamingo.net
Flamingo - Osprey		Naivasha	Jacob Wanyonyi	0722773560	jacob.wanyonyi@flamingo.net
Flamingo -Siraji Farm	Carnations, Roses	Nanyuki	Peris Muturi	0729050116	Peris.Ndegwa@flamingo.net
Flamingo - Ibis	summer, vegetables	Nanyuki	Abraham Gitonga	0722605942	-
Flamingo - Pioneer	Roses	Nanyuki	Gregory Sunguvi	-	-
Flora ola	Roses	Solai-Nakuru	Lucas Choi	0721832710	lucas.choi@floraola.co.ke
Flora Delight	Summer flowers	Kiambu/ Limuru	Marco	0710802065	marcovansandijk@yahoo.com
Florensis Ltd	Cuttings	Naivasha	Simon Mwangi	0721519470	simon.mwangi@florensis.com
Florenza Ltd 1 & 2	Roses	Solai	Vivek Sharma	0731040498	farm.florenza@megaspingroup.com
Fresh Gold Flowers Ltd	Flowers	Mt. Kenya	John Karimi	0721622294	karimi@freshgolgkenya.co.ke
Gatoka Roses	Roses	Thika	Herman Njuguna	0728 854 844	info@gatokaflowers.com
Golden Tulip	Roses	Olkalao	Umesh Choudhery	0739729658	umesh.gftl@btfgroup.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Groove	Flowers	Naivasha	John Ngoni	0724448601	groovekenya@gmail.com
Hanna Roses Ltd	Roses	Thika	Dinkar Wandhekar	0702418174	dinkar@eaga.co.ke
Heritage Flowers Ltd	Roses	Rumuruti	Sailesh Kumar	0722203750	hfl.srk@gmail.com
Highland plantations	Cuttings & Herbs	Olkalau	Mangoli Dickson	0792847884	production@highlandplants.co.ke
Interplant Roses	Roses	Naivasha	Gavin Mourittzen	0733220333	info@interplantea.co.ke
Isinya	Flowers	Isinya	Rajesh	-	pm@isinyaroses.com
Karen Roses	Flowers	Nairobi	Peter Mutinda	0723353414	pmutinda@karenroses.com
Kariki Ltd- Thika	Flowers	Thika	Miriam	0720674307	kariki.production@kariki.biz
Kariki Ltd - Nanyuki	Eryngiums	Nanyuki	Peterson Thuita	0724786004	bondet.fm@karik.biz
Kariki Ltd - Naivasha	Summer	Naivasha	Esau Onyango	0728606878	hamwe.production@kariki.biz
Kariki Ltd - Molo	Fowers	Molo	James Oluoch	0716333717	jame.oluoch@kariki.biz
Kenflora Limited		Kiambu/ Limuru	Abdul Aleem	0722311468	info@kenfloraa.com
Kentalya	Cuttings	Naivasha	Lynette	0733549773	lynette@kentalya.com
Kikwetu Flowers	Roses	Mt. Kenya	Rathan	0787266007	
Kisima Farm Ltd	Roses	Timau	Craig Oulton	0722205828	craig@kisima.co.ke
Kreative	Roses- Breeders	Naivasha	Bas Smit	0733607755	info@kordes-ea.com
Kongoni River Farm - Gorge Farm	Roses	Naivasha	Anand Patil	0728608785	anand.patil@vegpro-group.com
Kongoni River Farm - Liki River	Flowers	Nanyuki	Madhav Lengare	0722202342	madhav@vegpro-group.com
Kongoni River Farm - Star Flowers	Roses	Naivasha	Jagtap Shahaji	0792547633	japtag@vegpro-group.com
Kongoni River Farm - Kongoni	Flowers	Timau	Kadam	0721274413	--
Kongoni River Farm -Bemack	Flowers	Timau	Balasaheb Ingwale	0717181102	balasaheb@vegpro-group.com
Kongoni River Farm - Galaxy	Roses	Naivasha	Chandrakant Bachche	0724639898	chandrakant.bachche@vegpro-group.com
Kongoni River Farm- Longonot	Roses	Naivasha	Ravi Sathe	0715173603	ravi.sathe@vegpro-group.com
Lamorna Ltd (Herburg Group)	Roses	Naivasha	Vijay	-	admin@lamornaflowers.com
Lathy Flora & Fairy	-	Kiambu	John Mbaoni	0753888126	info@lathyflora.com
Lauren International	Flowers	Thika	-	0706804225	ravipalshikar.lil@btfgroup.com
Laurel Investment	Roses	Olkalou	Ravindra Palshikar	0740569286	ravi.lil@btfgroup.com
Lolomarik	Roses	Nanyuki	Topper Murry	0715 727991	topper@lolomarik.com
Lobelia	Roses	Timau	Ken Mwiti	0722475785	info@lobelia.co.ke
Maridadi Flowers	Flowers	Naivasha	Jack Kneppers	0733333289	jack@maridadiflowers.com
Maua Agritech	Flowers	Isinya	Kori	115355251	kori@mauaagritech.com
Mau Flora	Roses	Nakuru, Turi	Manju	0748254171	manju@mauflora.co.ke
Milenium Growers	Summer Flowers	-	Sushant Wankara	0731316000	sushant@marvelgreens.com
Molo Greens	Solidago, carnations	-			
Mt. Elgon Orchards	Roses	Tran Nzoia	Bob Anderson	0735329395,	bob@mtelgon.com
Mt. Kenya Alstromeria	Alstromeria	Meru	Miriam	0716162671	miriam@mountkenyaalstromerialtd
Mzuurie Group	Roses		Andrew Wambua	0724256592	awambua@moloriverroses.co.ke
Mzuurie Flowers - Maji Mazuri	Roses	Moi's Bridge, Eldoret	Mark Juma	0727471034	mjuma@majimazuri.co.ke
Mzuurie Flowers - Molo River Roses	Flowers	Kilelwa	Paula Koros	072241436	pkoross@moloriverroses.co.ke
Mzuurie Flowers - Winchester Farm	Roses	Karen	Kasoso Joseph	0725696509	-
Mzuurie Flowers - Winchester Farm	Flowers	Bahati	Joseph Kasoso	0725696509	jkasoso@winchester.co.ke
Nini Farms (Herburg Group)	Roses	Naivasha	Vijay Bhosale	0702662297	vijay.bhosale@herburgroses.nl
Nirp East Africa	Roses	Naivasha	Danielle Spinks	0702685581	danielles@nirpinternational.com
Ol Njorowa	Roses	Naivasha	Charles Kinyanjui	0723986467	mbegu@olnjorowa.com
Panda Flowers	Roses	Naivasha	Sundhar	0748436571	farm@pandaflowers.co.ke
Panocol International	Roses	Eldoret	Paul Wekesa	0722748298	paul.wekesa@panocal.co.ke
Penta	Flowers	Thika	Tom Ochieng	0723904006	tom@pentaflowers.co.ke
Pendekeza	Roses	Nanyuki	James Kiiru	0708124381	tambuzi.sales@tambuzi.co.ke
PJ Dave Flowers	Flowers	Isinya	Pravin Yadav	0708920202	gm@pidave.com
Pj Dave	Roses	Timau	Shantaram	0732556256	fmrisingsun@pjdave.com
PJ Flora	Roses	Isinya	Santos Kulkarni	0738990521	santosh@pjdaveflora.com
Plantech Kenya Ltd	Propagators	Naivasha	Idan Salvy	0702187105	idan@plantechkenya.com
Porini Flowers	Roses	Molo	Shakti Vanjimuthu	0739676998	shakti@poriniflowers.com
Primarosa Flowers Ltd	Roses	Ol njororok	Peter G. Njagi	0723575461	opm@primarosaflowers.com
Rain Forest Farmlands Ltd	Roses	Naivasha	Boniface Kiama	0722780811	bkiama@fleurafrica.com
Ravine Roses Flowers	Flowers	Eldama Ravin	Peter Kamuren	0722205657	pkamuren@karenroses.com
Redland Roses	Flowers	Thika	Kadlag Palaji	0723149968	-
Redwing Flowers	Flowers	Nakuru	Simon Sayer	0722227278	sayer@redwingltd.co.ke

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Rift Valley Roses (K) Ltd	Flowers	Naivasha	Peterson Muchiri	0721216026	fm@riftvalleyroses.co.ke
Rimi Flora Ltd	Hypericum	Njoro	Richard Mutua	0722357678	richard@rimiflora.com
Roseto	Roses	Salgaa	Aravindra Hirario	07417791483	gm.roseto@megaspingroup.com
Sandpro Growers	Gypsophylla	Meru	Elly Okech	0727580266	elly.okech@sandprogrowers.com
Savannah international	Geranium	Naivasha	Ignatius Iukulu	0728424902	i.lukulu@savanna-international.com
Selecta Kenya		Thika	Robert Khamala	0727 467 464	r.khamala@selectakenya.com
Sojanmi Spring Fields	Roses	Njoro	Senthil	0791184851	senthil.adhikesavan@bidcoafrica.com
Sunripe Farm		Naivasha	Antony	0711827785	naivasha@sunripe.co.ke
Schreus	Roses	Naivasha	Haiko Backer	-	-
Shades Horticulture	Flowers	Isinya	Ashutosh Mishra	0722972018	info@shadeshorticulture.com
Shalima Group (k) Ltd	Flowers	Nairobi	Natarajan	0738 999149	natarajan@eaga.co.ke
Shalimar Shalimar	Flowers	Naivasha	Maurice Ojoro	0725155307	-
Shalimar- Kabuku Farm	Flowers	Thika	Mohan Raj	0724265777	kabukufm@eaga.co.ke
shalimar- Mahee Farm	Roses	Olkalou	Natarajan	0738999149	natarajan@eaga.co.ke
Shalimar- Mwanzi Farm	Flowers	Rumuruti	Ram	0797185821	mwanziflowersfm@eaga.co.ke
Sian Flowers - Maasai Flowers	Flowers	Isinya	Nancy Kurgat	0720780322	nkurgat@sianflowers.co.ke
Sian Flowers - Agriflora (K) Ltd	Roses	Nakuru	Charles Mulemba	-	cmulemba@sianroses.co.ke
Sian Flowers - Equator Roses	Roses	Eldoret	Nehemiah Kangogo	0725848910	nkangogo@sianflowers.co.ke
Sierra flora	Roses	Njoro	Oppaso Bandgar	720070053	farm.sierra@megaspingroup.com
Simbi Roses	Roses	Thika	Karue Jefferson	0733771652	simbi@sansora.co.ke
Sirgoek Flowers	Flowers	Eldoret	Andrew Keittany	0725 946429	sirgoek@africaonline.co.ke
Solai Roses	Flowers	Solai, Nakuru	-	-	solairoses@gmail.com
Sololo Agriculture	-	Eldoret	Andrew Tubei	0722728364	atubei@sianflowers.co.ke
Subati Flowers	Roses	Subukia	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers	Roses	Naivasha	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers (Suera)	Roses	Nyandarua	Naren Patel	0712 584124	naren@subatiflowers.com
Sunfloritech-Blue Sky	Gypsophilla	Naivasha	-	-	info@blueskykenya.com
Sunfloritech -Tulaga	Roses	Naivasha	A Duzai Rajan	0794572232	farmmgr.tulaga@btfgroup.com
Stockman rozen	Roses	Naivasha	Julius Muchiri	0722200890	julius@srk.co.ke
Syngenta Flowers - Kenya Cuttings	Flowers	Thika	Fred Okinda	0722579204	-
Syngenta Flowers - Pollen	Flowers	Thika	Joseph Ayieko	0733552500	joseph.ayieko@syngenta.com
Tambuzi	Roses	Nanyuki	Benard Maina	0721860080	tambuzi.sales@tambuzi.co.ke
Terrasol	Cuttings	Limuru	Benard Adwarh	0753444230	adwarh@terrasolkenya.com
Timaflor Ltd	Flowers	Nanyuki	Simon van de Berg	0724443262	info@timaflor.com
Transebel	Flowers	Thika	David Muchiri	0724646810	davidmuchiri@transebel.co.ke
Uhuru Flowers	Flowers	Nanyuki	Ivan Freeman	0713889574	ivan@uhuruflowers.co.ke
Utee Estate	Chrysanthemums	Nairobi	Nirzar Jundre	0722848560	nj@blackpetals.co.ke
United Selections	Roses -Breeder	Ngata, Nakuru	-	-	-
V.D.Berg Roses	Flowers	Naivasha	Johan Remeeus	0721868312	johan@roseskenya.com
Valentine Ltd	Roses	Kiambu/Limuru	Joseph Kariuki	0728 093 379	joseph.kariuki@valentinegrowers.com
Van Kleef Kenya Ltd	Roses	Njoro	Judith Zuurbier		roses@vankleef.nl
WAC International	Breeder	Naivasha	Richard Mc Gonnell	0722810968	richard@wac-international.com
Waridi Ltd	Roses	Athi River	Kenneth Mbae	0722362865	farmmanager@waridi.com
Wildfire	Roses/summer	Naivasha	Patrick Mbugua	0721639306	patrickmbugua@wildfire-flowers.com
Wilfey	Gypsophila/hypericum	Subukia	Sammy Ndung'u	0720467551	-
Wilmar Agro Ltd	Summer Flowers	Thika	Alice Muiruri	0722 321203	alice.muiruri@wilmar.co.ke
Windsor	Roses	Thika	Pradeep Bodumalla	0736 586 059	farm@windsor-flowers.com
Xpressions Flora	Roses	Njoro	Ashesh Misha	0735873798	-
Zee Flora	Roses	Yatta	Kolekar	+251 929231520	-



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TRANSFORMING FARMS & LIVES THROUGH TECHNOLOGY

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FUNGICIDE

SOLUTION FOR DOWNY MILDEW

A broad spectrum & penetrating fungicide against Early & Late blights on potatoes; Late blight on tomatoes. Downy mildew on snow peas/ sugar snaps, onions & ornamentals; powdery mildew on cucurbits, bean rust, bean anthracnose & angular leaf spot on French beans.

Active Ingredients:

Famoxadone 225g + Cymoxanil 300g per Kg

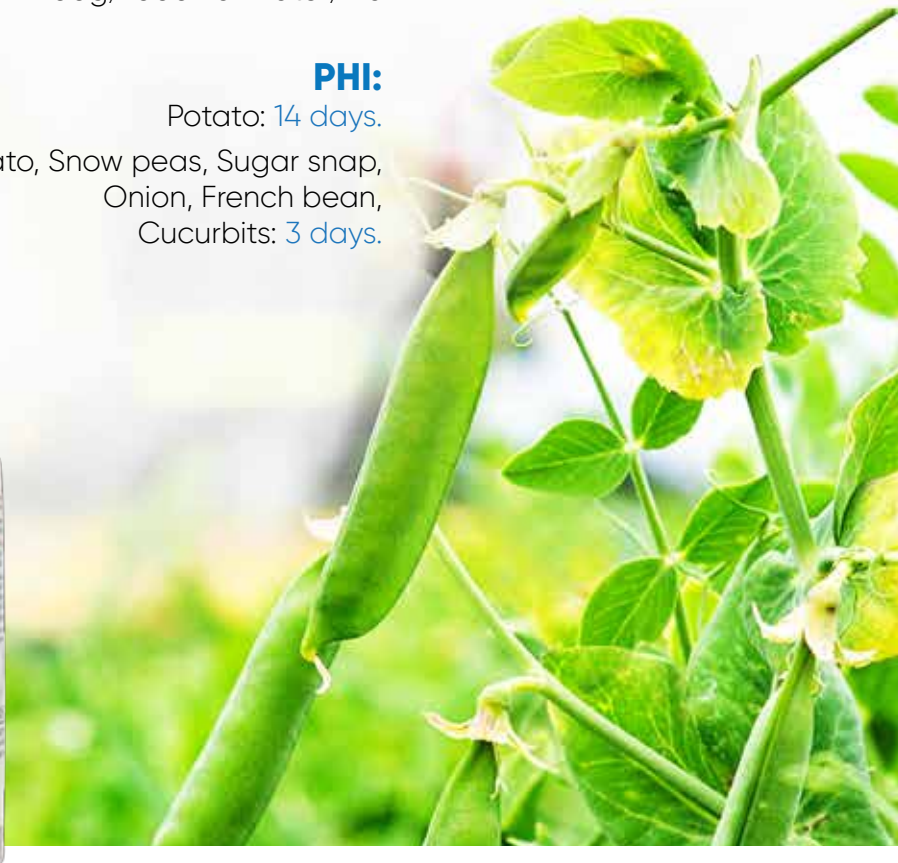
Application Rate:

400g/1000L of water/Ha

PHI:

Potato: 14 days.

Tomato, Snow peas, Sugar snap, Onion, French bean, Cucurbits: 3 days.



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