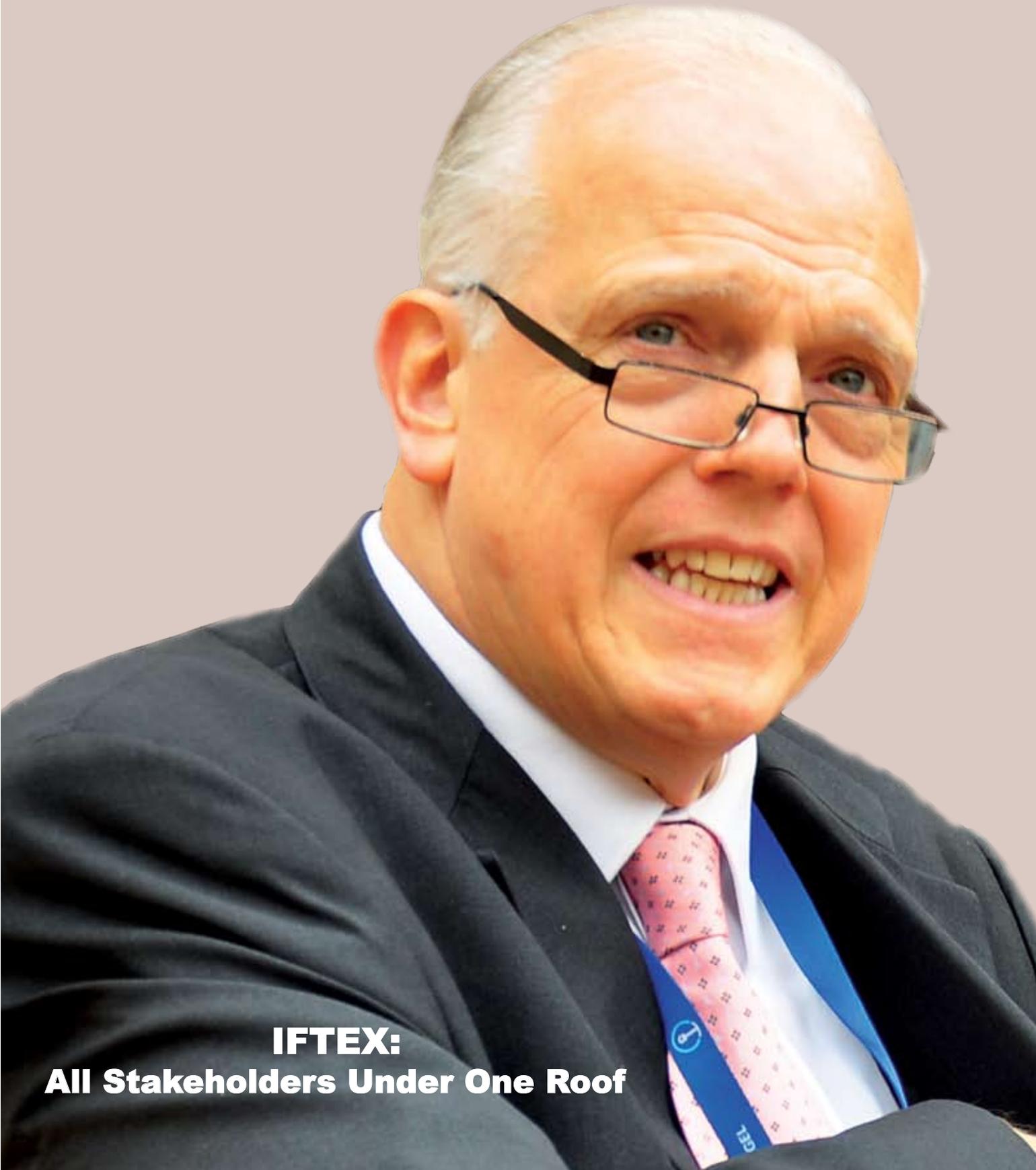


May - June 2022

THE LEADING FLORICULTURAL JOURNAL IN THE REGION

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**IFTEX:
All Stakeholders Under One Roof**

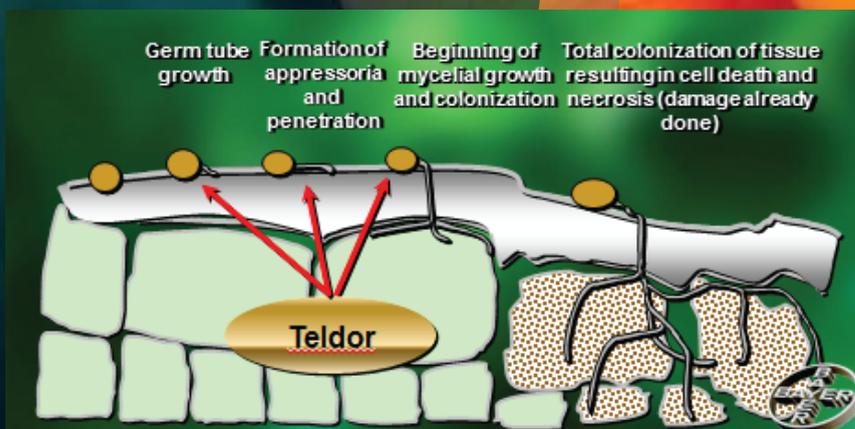




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Cover Photo: File Picture

The Leading Floriculture Magazine

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Publishers of Floriculture Magazine

P.O.BOX 79396 - 00200, Nairobi.
Tel: 020-2440909 • Cell 0732-558172,
Fax: 020-2244892
Email: info@floriculture.co.ke
Website: www.florinews.com

Floriculture Team

Editor

Masila Kanyingi

Sub-Editor

Mary Mwende Mbithi

Editorial Assistant

Cornelius Mueke

Contributors

Simon Kihungu

Parit Shah

AIPH

CIOPORA

Photographers

Jairus Ndani

Graphic Designer

Evelyne Ndiema

Marketing

Martin Nyachwaya

Editorial Consultants

Tom Ochieng : Penta Flowers
Victor Juma : Syngenta EA Ltd
Simon Kihungu : Corteva
Charles Njuki : Credible Blooms
Daniel Kisongwo : Consultant
Maurice Koome : Bayer Cropscience

May the Government rise.

After two years of anxiety, I am excited to pack my briefcase again to IFTEX. The 3-day Fair has been an integral part of planned activities ahead of the big event. The thought processes that informed the decision was to afford actors in the horticultural space ample time to interact longer and serve the purpose of the Fair.

IFTEX is an important strategy for accelerating our effort towards the realization of a global village in the flower sector. Potentially, the Fair will contribute to the objectives of our growers reaching new markets especially at this time of uncertainty in some of our main markets.

Notwithstanding the exciting times, there are equally major challenges that undermine the efforts being made by the sector. We all know about the hikes in freight charges, high taxes and tough market regulations. The government needs to do everything possible to stabilize the situation.

The development of the sector cannot be solely undertaken by the private sector as it is now. In recognition of this, the Kenyan government should work closely with the private sector in facilitation, regulatory, freight charges and fair taxation. It is important for the government to embrace a fertile partnership that will take the sector a notch higher.



So while saluting the role each has played, I look forward in the coming year for greater collaboration to continue building momentum for the accelerated development of the sector.

Enjoy your reading.

*Masila Kanyingi
Editor*

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6 Key Benefits IFTEX Show Has to Market Your Business

IFTEX provides opportunities to engage with current and prospective buyers. It doesn't matter whether you're marketing a product or selling your new variety, an in-person presentation and short question based conversation afterwards can help you to close the deal quickly versus an email sharing the latest sales promo.

IFTEX has traditionally been a very popular exhibition to market your products, services and business. With advances in social media marketing and Internet technology, like webinars, Google hangouts and video conferencing, the value and benefits of marketing via trade fair comes up. Though technology is changing marketing at a rapid pace, there are several benefits from having exhibit presence at a trade show.

These six key benefits are why your business must have IFTEX Exhibition marketing presence:

1. *IFTEX Creates Lasting Impressions If Done Right*

The main purpose of IFTEX is to showcase a wide variety of options for attendees and business to engage and interact with each other. With a well-designed trade show booth that draws attendees'

attention, a few promotional items, a contest opportunity with giveaways and sales collateral, you will have a well-rounded booth experience that leaves an impression with a prospective customer for months. Consider having attendees enter a drawing by submitting a business card or completing an action on social media. These types of promotions serve dual purposes: increasing engagement and capturing potential contact information as well.

2. *IFTEX is Incredible Face-To-Face Marketing Event*

When it comes to influencing a decision, nothing can compete with face-to-face interaction. IFTEX provides opportunities to engage with current buyers and prospective. It doesn't matter whether you're marketing a product or selling your new variety, an in-person presentation and short question based conversation afterwards can help you to close the deal quickly versus an email sharing the latest sales promo. This makes pre-IFTEX planning key to your success. If you've got an employee who is a natural at "turning on the charm" or one who is great at relationship selling, should be a no brainer on them being a part of the sales team. The cost of bringing them to IFTEX show event could pay for itself within hours of the show starting.

3. IFTEX Lead Generation Potential

When it comes to benefits, this is one of the biggest. IFTEX has massive followings and attendance. Each attendee of IFTEX is a potential lead waiting to be captured. Having QR codes linked to social media accounts or lead generation pages, asking for contact information during a presentation and getting their business cards are all great ways to get fresh leads in your sales pipeline. Make it



Mr. Dick Van Raamsdonk., IFTEX President

clear to them that you'll be contacting them after the show. Make sure to follow up with the candidates most likely to buy while the event is still fresh in their mind.

4. IFTEX Target Audiences Result In Direct Sales Opportunities

IFTEX has a specific market or niche it focuses on. By exhibiting at IFTEX, the odds are very high that you'll have exposure to an audience that is likely to have an interest in your product or services and are ready to buy. ALWAYS have

something to showcase at IFTEX. It doesn't matter if you only bring your old varieties or the newest, the opportunity to generate sales shouldn't be lost because you didn't have something. Don't miss out on that sale!

5. IFTEX is Cost-Effective Networking and Advertising

Designing the trade show booth, renting space on the trade show floor, traveling to the show and from the show, paying for lodging and meals can seem like a steep price tag for a single marketing event. If you've done the pre-show marketing work leading up to the show,



Awarding in a previous IFTEX Exhibition

the potential that IFTEX offers your business can far exceed the investment.

Though you might have a larger initial investment to showcase your business at IFTEX than other advertising or networking methods, the cost to convert a prospect into a sale is often much lower than other alternatives. With proper research and planning, IFTEX is one of the most cost-effective sources of leads and sales possible.

6. IFTEX Level The Marketing Field

One of the favorite benefits to IFTEX is the low cost barrier to get involved. From locally owned small scale growers to multinational growers, everyone has access to the same attendees at IFTEX. It's almost as simple as paying for your exhibit location space, designing your trade show display booth, promoting your business leading up to IFTEX and interacting with the audience during the show. Even a relatively unknown grower can generate large numbers of sales and leads through IFTEX. Certainly this is possible via other marketing channels, but few are as easy to execute as IFTEX can be.

IFTEX offers big benefits to businesses of any size. By combining exposure to a large number of potential leads with the ability to interact personally, IFTEX offers an experience that other forms of marketing cannot.

All Under One Roof

The 1979 film 'Being There', is the only screen performance for which actor Peter Sellers won an Oscar. Seller portrays a simple minded gardener turned from a sheltered existence into the harsh realities of life. Through a series of mishaps and misunderstandings, the gardener became a highly respected policy adviser to the president of United States.

The thinking on which the character builds his reputation and gains recognition as an authority is the simple philosophy that politics and business



Exhibitors Follow opening speech keenly

And there can't be many who would disagree with that theory. Not in the Flower business at any rate, where 'Being There', in the right place at the right time can be condensed into one word- 'Marketing'.

for USA". He said Being There was the best way of meeting and networking with the right buyers.

Speaking exclusively to *Floriculture Magazine*, Mr. Dick Van Raamsdonk said Kenya has the right quality and price for buyers. He said the market is big enough and this is the right time Kenyan growers can make themselves the global flower suppliers. "Kenyan growers have a business duty to present themselves in a big way in this year's IFTEX. This will give them an opportunity to meet not only the buyers but also the consumers and get to understand what they need, he added.

"Do Kenyan growers want to market themselves?" he asked. Then 'Being There' will be the best decision one can make. Mr. Dick Van Raamsdonk said that he had teamed up with the government institutions, flower organisations and growers to make the show very successful. Likening Kenya to a sleeping flower giant, Mr. Dick Van Raamsdonk said It was only in Kenya where you can get all flower sizes, most promising production and the right quality from one country all year round. "This is a golden chance to market these products to the most promising flower market currently", he said.



Chrysal Team in a previous Exhibition

are very much like a garden- find or make the right sort of soil, plant it well, nurture it, feed it, and it will reward you well by providing for you year upon year.

And even in the world of commerce there is a reasonable analogy to be made.

As to how the film came by, its title you probably cannot do better than hazard guess that it was a reference to its main character 'Being There' in the right place in the right time.

together all growers of cut flowers and their buyers under one roof.

During an earlier interview, Mr. Dick Van Raamsdonk said unashamedly that he believed 'Being There' was the main commercial advantage to every Kenyan grower. Adding, "Buyers love Kenya Flowers and Kenya is currently the most exciting supplier to the buyers. To Europe, Kenya is what Ecuador and Colombia is

By no means the least of the reasons given and yet surprising not the first thought on every growers mind, this is an excellent way of meeting buyers. Kenyan growers will not only meet the right buyers but also keep their position as a leader in flower exports. It is near suicidal for any grower who ignores his market. "It is my dream to bring the most promising flower producer (Kenya) and the most promising flower market together", he concluded.

Quality standards are always a top priority. And so everyone would like to share with the original breeder, grower, buyer and consumer. Those who will miss IFTEX will spend the next one year with the old technology, old contacts, old friends and business plus more aging mindset on how the market is evolving. Well the chance of 'Being There' is open you do not have to say when it's too late. "BUT NO BODY TOLD ME"

Why Exhibit?

Trade fairs, conferences, business events, economic forums and exhibitions can be defined in a unified manner as sophisticated platform for conducting business on a national and international scale. It is more than just a marketing tool as the entire marketplace is at your fingertips. As a source of market information they fulfill your needs in a centralized way said Mr. Dick Van Raamsdonk.

IFTEX provide growers with an excellent opportunity to assess opinions from buyers and determine market potential, conduct research and evaluate competition, develop commercial structures by identifying new agents and distributors, and initiating joint ventures and project partnerships. "IFTEX provides a unique networking platform to both local and foreign participants. It helps in promotion, marketing and publicity efforts of participating companies. It leads to joint ventures, tie-ups and also



Kenyan growers have a business duty to present themselves in a big way in this year's IFTEX. This will give them an opportunity to meet not only the buyers but also the consumers and get to understand what they need,

help bring in investment in the Country", says Mr. Dick Van Raamsdonk.

As a reliable media for exchange of information, IFTEX is being globally recognized as the apt medium for doing

In its tenth year, IFTEX has gotten an acceptance in its role in promoting trade in the sector. This was assured the moment buyers accepted to come in. It was not the same anymore and may never be the same.



Mzurrie Group Team at a previous IFTEX

flower business today. In the words of Dick Van Raamsdonk, "The current economic slowdown is the ideal time for the industry to showcase its presence on exhibition floor as the industry is very much in a position to reinforce its tenacity, strength and collaborative nature".

In fact, in tough market conditions, it becomes all the more imperative for all growers to show greater visibility, strong fundamentals and continuation of businesses. The platform is ideal for growers to nurture the trust and confidence across the supply chain."

Agrees Eliud Njenga of Credible Blooms, "IFTEX brings the potential buyers at a single platform wherein they have an access to entire gamut of varieties. The tools of the exhibition is like live demonstration, product launches, touch and feel of the product, networking opportunities, etc., all further foster sales.

What has followed was a number of buyers increasing every year. The advent has seen a new development to further enhance the productivity of IFTEX; suppliers into the industry have joined in and are increasing by year. The step has catapulted IFTEX to the new levels of excellence. It can now be counted among the major flower trade shows in the world.

Among other benefits, IFTEX provides growers and buyers a face to face meeting point, which is seen as a perfect cost effective means for achieving trade objectives. According to Mr. Shiraz of Agrichem Africa Ltd, "The scope of exhibition becomes more important as face to face meetings with target audience provide an opportunity for businesses to meet new buyers in person and also renew their contracts with existing buyers."



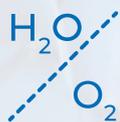
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The Three Major Challenges for Kenya's Flower Industry

Over the last years, the Kenyan flower industry has grown rapidly. It is currently one of the country's top industry after remittance and tourism and Kenya Flower Council's (KFC) CEO Clement Tulezi believes the industry too can surpass tea in the next few years. However, there are several challenges, like freight capacity and rate, Kenya's taxation regime and the EU-tightened plant health regulations, the industry needs to overcome. The team of KFC is doing their utmost best to enable the industry to do so, engaging with all involving relevant actors for new and improved solutions and alternatives.

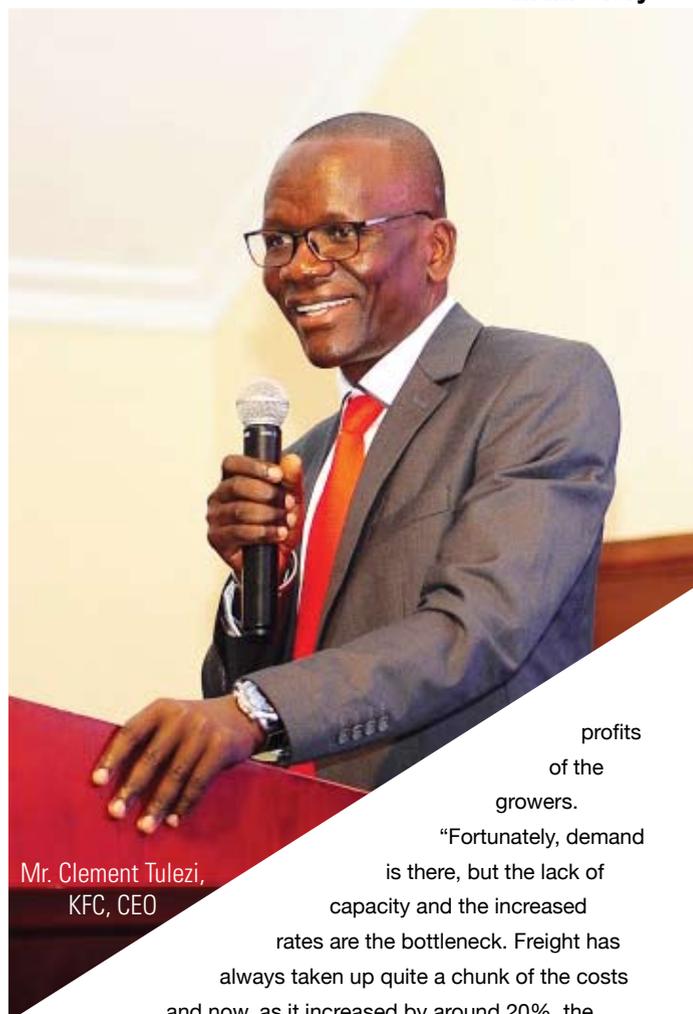
Kenya's cut flower industry has grown. Currently, the Kenya cut flower industry employs over 350,000 people directly and had over 3 million people indirectly, explains Tulezi, who is very pleased with the growth over the last few years. "When comparing the situation with 5 years ago, the industry has improved significantly in all aspects; it has become more organized and we've strengthened our systems on how the growers produce their products in terms of sustainability and the working conditions of the workers. More and more growers are now certified and the KFC Flowers and Ornamentals Sustainability Standard (F.O.S.S) is now one of the major standards in the world, based on Good Agricultural Practices, environmental and socio-economic principles, which ensure certified producers foster sustainable, responsible, and safe production of cut flowers and ornamentals. In the coming years, Tulezi has good hopes for the industry as he expects the industry to grow even further.

The three challenges

The Kenya cut flower industry is eager and ready to grow more, but several external factors may limit this growth, Tulezi says. According to him, the three major challenges are freight, Kenya's taxation regime and the EU-tightened plant health regulations.

Freight

Air freight is one of the major aspects that is eating in on the



Mr. Clement Tulezi,
KFC, CEO

profits
of the
growers.

"Fortunately, demand is there, but the lack of capacity and the increased rates are the bottleneck. Freight has always taken up quite a chunk of the costs and now, as it increased by around 20%, the growers definitely feel it." For this reason, KFC is in close contact with freight forwarders and is also looking for alternatives to transport flowers. "One of the things we are looking at is shipping flowers to Europe by sea, says Mr. Tulezi.

Colombia succeeded shipping flowers to the US and over 50% of their produce is going by sea. Of course, they are closer to the US than Kenya to the EU, but we, with the support of major buyers and Kenyan authorities, this is a viable option. Lately, we have witnessed some growers shipping some varieties to Europe. Now, more growers across different flower types are needed. KFC is now engaging the government to provide a 'green channel', so that there will be no delays at the port of exit in Mombasa. The international buyers and exporters are keen and so far, the government seems to be very understanding and willing to help"

Taxation regime

Locally, the Kenyan agriculture and fresh produce industry is dealing with increased taxes in the supply chain. "The government is not collecting enough taxes to meet its budget. It has to raise the deficit locally and through national and international borrowing; which means the introduction of several new taxes

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Main Story

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from key sectors such as agriculture, affecting many industries, including the cut flower and ornamentals industry. The increase in taxes will be on products and goods such as chemicals, fertilizers, tractors and machinery, but also on services. The increase in the Horticultural Crops Directorate from 10 cents per kilo of exported fresh produce to 0.25 percent of the Free on Board value has pushed this levy up to 10 times.” As a result, these taxes will negatively impact the industry. Additionally, KFC moved to court to challenge the imposition on 1 percent Minimum Tax by the government. “The increase in taxes will constrain the expansion of our sector and we will lose investors, who will decide to go elsewhere. We are explaining to the government that it should not kill the goose that lays the eggs, but it should nurture it.

EU plant health regulations

Another challenge the Kenyan growers are

dealing with is the tightening of the EU plant health regulations. “False Codling Moth is a pest that often occurs in roses, but also on capsicum and many other crops. The EU is currently doing 10 percent minimum checks on all Kenya’s rose shipments due to the occurrence of this pest. We are worried that this may increase a couple of times if the pest continues to be detected in our produce.

This will slow down the movement of the goods and extra manpower will be needed, which means extra costs for the exporters.”

It is a pest many countries are dealing with, but as Kenya is the biggest exporter, we remain the main focus, he explains. KFC together with NPPO, KEPHIS and the growers and exporters are doing their utmost best to minimize the occurrence of this pest. “We are tightening the protocols and guidelines and asking growers and exporters to implement to the letter.”

Expanding markets, how’s that going?

The majority of the Kenya’s cut flowers are shipped to Europe and even though there

is plenty of opportunity to expand in that continent, expanding into other continents and countries has been, and still is, an important point on KFC agenda for many years now. Over the years, Kenya entered Australia and the US, but how’s that going at the moment? According to Tulezi, there is still much to do. “We used to be one of Australia’s main suppliers of flowers, but Australia’s zero pest tolerance directive resulted in a loss of interest from many growers.

Positive outlook

Despite the current challenges KFC and the Kenyan growers and exporters are dealing with, Tulezi is positive. “We’ve accomplished a lot in the last number of years. We’ve made major steps and the Kenyan flower industry have become a structured industry. On top of that, recognition of Kenya as a major supplier of quality flowers has increased sharply and we have good hopes that it will continue in the future. Now, as KFC, we are doing our utmost best to continue to let this industry thrive.”



Be Prepared. Beat Downy Mildew

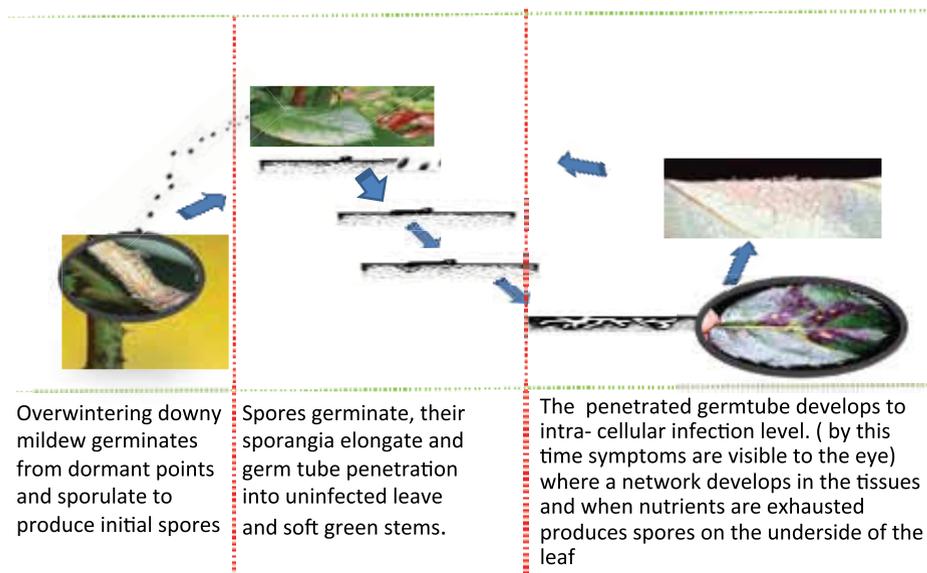


At Bayer East Africa, we understand the impact Downy Mildew on the production of flowers and have a robust portfolio to have in management of the same.

Understanding Downy Mildew

The pathogen is an obligate parasite. An obligate parasite, or holoparasite, is a parasitic organism that cannot complete its life-cycle without exploiting a suitable host. If an obligate parasite cannot obtain a host it will fail to reproduce. This is opposed to a facultative parasite, which can act as a parasite but does not rely on its host to continue its life-cycle. For this reason the parasite can only survive in living tissue and overwinters inside the plant.

Downy Mildew infection cycle



Overwintering downy mildew germinates from dormant points and sporulate to produce initial spores

Spores germinate, their sporangia elongate and germ tube penetration into uninfected leaves and soft green stems.

The penetrated germ tube develops to intracellular infection level. (by this time symptoms are visible to the eye) where a network develops in the tissues and when nutrients are exhausted produces spores on the underside of the leaf

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- Root diseases control (Pythium and Phytophthora) Increase production of healthy roots and root hairs.
- Enhanced plant vigor as observed in the absence of the disease.
- The root and growth stimulant effect, well known for many years in Previcur N, is now boosted by Fosetyl in Previcur Energy

Melody Duo

Melody Duo offers a tool to control Downy Mildew and help manage the development of resistance by the disease. Of the two active ingredients, iprovalicarb is a systemic fungicide with protectant, curative and anti-sporulant properties active against downy mildew. It comes from a group of active substances and has a unique mode of action. Importantly, there is no resistance or cross-resistance to iprovalicarb, making Melody Duo a superb resistance management tool.

INFINITO

Infito activity is systemic, protectant and translaminar which enables it to confer consistent high-level protection for leaves and stems against downy mildew. Its long-lasting residual activity ensures an outstanding anti-sporulant activity with lasting protection during the risk weather period. Infito does not harm predatory mites and is compatible with IPM programs.

Predisposing factors for disease development:

Favorable conditions:

- High humidity (RH:85-100%) or free water during the day
- Low temperatures (16-22°C) during the night
- Wide diurnal range Pathogens

Susceptible varieties

Benefits of Previcur energy drench

1. Overwintering Downy mildew will be cured.
2. There will be continued uptake of the product from the growing media which improves on product coverage plus offering protection to the newly forming shoots.
3. Control of the fungal pathogens that are present in the growing media that causes root rot diseases.
4. Fosetyl AI will induce systemic acquired immunity.

Product	Active Ingredient	Chemical Group (Frac Code)	Biological Mode of Action	Effect on disease cycle	Biological Moa	Rate of Application/Ha	Mode of Application
PREVICUR ENERGY	Propamocarb hydrochloride 530g/lit + Fosetyl Aluminium 310g/lit	Carbamates (28)	lipid synthesis or transport	Inhibit mycelial growth, reduces sporangia production and sporulation, Stimulate natural defence reaction.	Systemic	2.5lit per Ha	Drench
	Fosetyl Aluminium 310 g/l	ethyl phosphonates (P 07)	host plant defence induction		Systemic		
INFINITO	Fluopicolide 62.5g/L	pyridinyl(methyl-benzamides)(43)	Cytoskeleton and motor protein	Spore germination, Mycelium growth, Spore production	Translaminar	1.0-1.6l per Ha	Foliar spray
	Propamocarb Hydrochloride 625 g/l	carbamates (28)	lipid synthesis or transport		Systemic		
Melody Duo	Propineb 600 g/kg	dithio-carbamates (M 03)	multi-site activity	Spore germination, Haustoria formation, Mycelial growth, Inhibit spore formation.	Contact	2.25 kg per Ha	Foliar spray
	Iprovalicarb 90 g/kg	valinamide carbamates (40)	cell wall biosynthesis		Systemic		

Molo River Roses Ltd: 'The Blooming Wasteland'

It has been a decade of blossom for Molo River Roses Ltd since inception, and a beautiful milestone that seemed a hurdle during its establishment.

By **Mary Mwendu Mbithi**



Paula Koros, Molo River Roses GM

When a seed is planted, the sprouts exult the sower; the new shoots are his source of inspiration to nurturing the new plant to maturity until it brings forth good fruit. Thus,

the farmer has every reason to celebrate his bumper crop. Similarly, achievements are a call for celebration. After years of toiling like a Trojan and working one's fingers to the bone, success is the ultimate crown that underscores the results.

It may take a long or a short duration but regardless of time, success is success. The wise man said 'hurry, hurry has no blessings,' but went on to say; 'slowly but surely, the bird builds its nest.' Before we could even rethink, he added that; 'both the fast and the slow will meet each other on the ferry boat.' In





Nakuru, in the flamingo county of Nakuru, a story is told of one farmer’s hobby that was ultimately turned into a cash cow. Just as the axiom, ‘Happy is the man who can make a living by his hobby.’ Out of the love for flowers, a rose farm flourished and was named after Molo River which flows within the area, providing water to the immediate community.

“Do you think we can grow flowers in this area?” Mr. Wambua smiled as he recalled the words asked by the then Executive Chairman of Mzurrie group as they visited the location intended to set up the new flower farm. “Looked at the area, the immediate answer which came to my mind was ‘No’ but when I opened my mouth I said ‘Yes’...” he added.

Given that this was a familiarization tour, Mr. Wambua decided to revisit the site to do a detailed feasibility study. Together with his team, they did a number

of technical studies including soil and water analysis tests. They collected data from the nearest meteorological station which included; rain, temperature and humidity data. Later, they did the topographical survey of the area which helped in positioning of the greenhouses and other facilities within the farm.

After all studies were concluded and financing approved, it was time to move to the ground to implement the project. The team cleared the bushes and fenced off 30 Hectares from the larger ranch area. Then they cut off a new road to the farm and graded it. This made transportation of materials easier. Afterwards the area was flattened and setting up of the greenhouses commenced.

“Not long after we moved to the ground than the rains started. We had not completed the new road and trucks transporting greenhouse

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other words, success does not come with a timestamp.

After years of toil and moil, it’s now ten years of success for Molo River Roses Ltd! “It has been a decade of blossom for Molo River Roses Ltd since inception, and a beautiful milestone that seemed a hurdle during its establishment. Eventually, it has birthed a success story- the story of a mega lodestar, a prestigious flower farm in Kenya -Molo River Roses Ltd, ” an elated Mr. Andrew Wambua, the Group General Manager said.

Here’s the beautiful story of Molo River Roses;

In the wild, sultry and parched area of Kilelwa, Kabarak, 30 kilometers Northwest Lake

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Botto Solar takes this opportunity to Congratulate **MOI RIVERS ROSES LTD ON THEIR 10TH ANNIVERSARY**
 We are proud to be your partner in growth

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Company Profile

From Page 15

materials would get stuck, and the materials would be offloaded far from the site. The rains would start during the day making it impossible to work outdoors.” Mr. Wambua narrated.

“The other challenge was getting skilled labor within the neighborhood. The nearest flower farm from this area by then was about 50 kilometers away and most locals had not dealt with flowers before. We had to start intensive trainings on all aspects of flower production and handling,” noted Mr. Wambua.

Eventually, a ten hectares piece of land, right in the middle of a torrid region, where only cactus and other spiky shrubs grew, became the birth place of Molo River Roses in 2012. An idea that saw the reclamation of the environment around Molo River Roses bringing forth a microclimate around the vicinity.

According to Mr. Wambua, who has overseen the growth of the farm since inception, the sprinkler and the screen systems were the way forward to making the dream a reality. On the ten hectare piece of land, spray roses were planted. This attempt came out well and with time, the management expanded the farm in phases from 10 ha to 12 ha, 15 ha, 17.5 ha, 23 ha, then 27 ha. Currently, the farm is on a clear span of 30 hectares of fifty-two varieties of spray and standard Roses. To be precise, 60% of the land is on spray roses and 40% on standard roses.

Affiliation of Molo River Roses Ltd to other flower farms

Under the umbrella name ‘Mzurrie Flowers,’ the farm brags of two sister-farms namely Maji Mazuri Flowers Ltd and Winchester farm Ltd Bahati. Maji Mazuri Flowers Ltd was started in 2002 and is situated in Moi’s Bridge- Eldoret, standing at an altitude of 1950 metres above sea level. It covers an area of 30 hectares under spray and standard rose production.

Standing at an altitude of 2160 metres above sea level, Winchester Farm on the other hand, was instituted in the year 1992 in Nairobi but in 2015 the farm was moved to Bahati area of Nakuru. The farm prides

itself in production of premium roses and just like the two sister farms, it runs expansively on 30 hectares of land.

The suitability of Nakuru to set-up Molo River Roses

Despite the fact that the area was hot and dry, the land was readily available. There was the need to utilize a large chunk of ranch that lay fallow and the best way was to plant flowers and trees.

“The area was like a waste land, a 1,500 Hectare ranch full of ant hills, huge gullies and thick thorny shrubs at an altitude of 1750 metres above sea level. There was no in road to the farm from the main road. We had to

park our cars beside the main road and walk the one kilometer stretch to the centre of the farm,” Said Mr. Wambua.

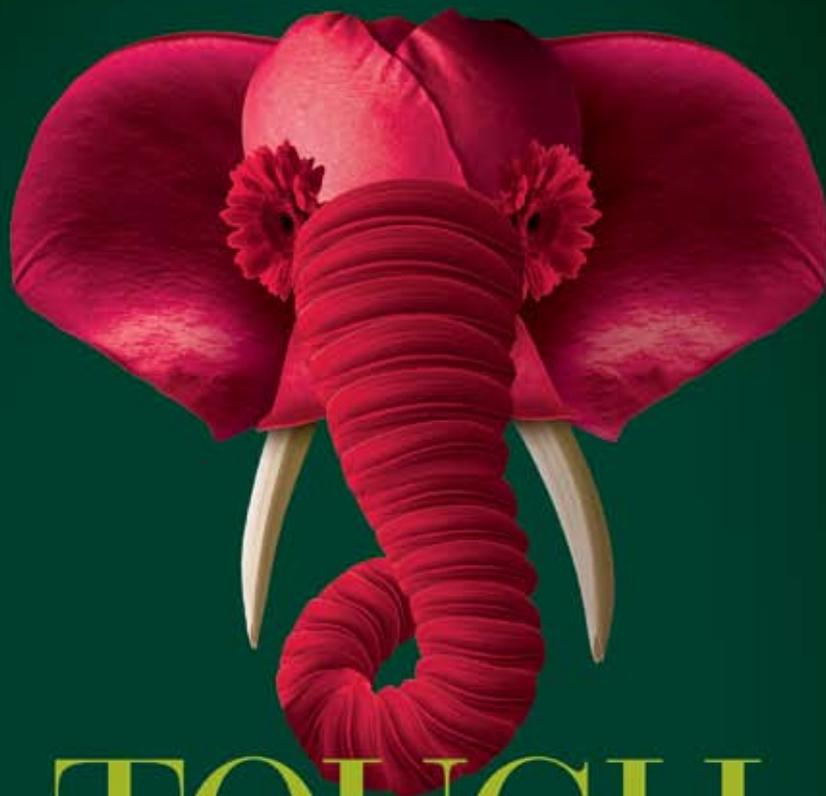
“The farm was not as bad as we thought. Some areas were relatively flat with few ant hills. Our Director had invested heavily on huge natural dams holding more than 500,000m³ (cubic metres) of rain water, which was the main reason for wanting us to start the flower farm in this area. The soils looked good, mainly clay loams with no rocks even to a depth of 30 feet. It was a hot day and I could estimate the temperatures to be 28-30 degrees Celsius.” Mr. Wambua added.

Human Resource

Molo River Roses has a work force of 450 employees. The Group General Manager Mr. Andrew Wambua oversees all the group

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TOUGH BUT FRIENDLY

Arima provides an effective and noble control of spider mites that guarantees high quality roses for demanding markets.

- Highly compatible with biological controls.
- Quick knockdown and long lasting activity against spider mites at any stage of development.
- Ideal complement for anti-resistance programs.
- Safe solution for crops and spray operators.

EVERY FLOWER TELLS A STORY™



syngenta®

Congratulations Molo River Roses
for the dedicated commitment and ten-year milestone achievement!
Syngenta is grateful for the opportunity to partner up through all these years.

Company Profile

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operations of Mzurrie Flowers. All the three farms have managers who sit at the helm of the respective farms with Ms. Paula Koros at Molo River Roses, Mr. Mark Juma at Maji mazuri and Mr. Joseph Kasoso at Winchester Farm. Each farm has a farm manager. The marketing department is headed by the Group marketing manager who oversees all the marketing activities of the three farms.

Employee Welfare

In Molo River Roses, the management is actively engaged in the welfare of the farm's employees. They are often treated to special lunches, get togethers and end year parties among other social events. They also provide adequate and appropriate protective gear for their employees.

As Mr. Wambua puts it, "I would rather train employees and they leave, than not train them and they stay," the management invests in employee trainings such as technical and finance workshops among other trainings.

Molo River is founded on values that



Eventually, a ten hectares piece of land, right in the middle of a torrid region, where only cactus and other spiky shrubs grew, became the birth place of Molo River Roses in 2012. An idea that saw the reclamation of the environment around Molo River Roses bringing forth a microclimate around the vicinity.

promote teamwork, reliability, passion, respect and integrity. These build that firm foundation and a conducive working environment for its entire staff. In his coherent explanation Mr. Wambua talked of humane treatment of employees citing, "Be hard on standards but be soft on your people (employees)." He went on to say, "Deal with the issue, not the person."



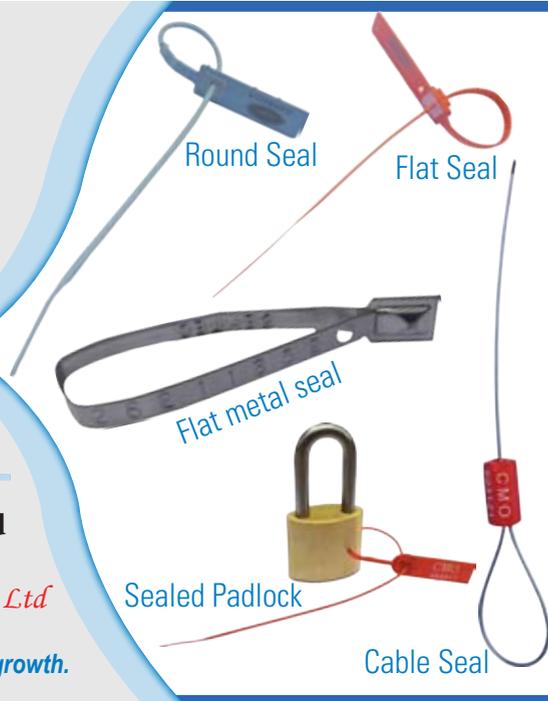
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CMO Trading Limited
takes this opportunity to

Congratulate *Molo River Roses Ltd*
on their 10th Anniversary.

We are proud to be your partner in growth.



Customer Satisfaction

Driven by the mission statement of the farm, 'To propagate and grow quality flowers in Kenya for export in a socially and environmentally responsible manner, geared towards satisfying customer needs while providing value to shareholders in dynamic and challenging atmosphere for employees,' and the vision that; 'To be the world's preferred brand in floriculture'; simply means that, at Molo River Roses, customer satisfaction is key.

The whole idea is to give the client a good end-product. The farm aims to gratify their clients' needs through production

of high quality roses by instilling high standards of production. The management has put in place quality control systems in various departments within the farm. Also, the communication department is focused on customer feedback through the communication platforms availed for feedback by the management.

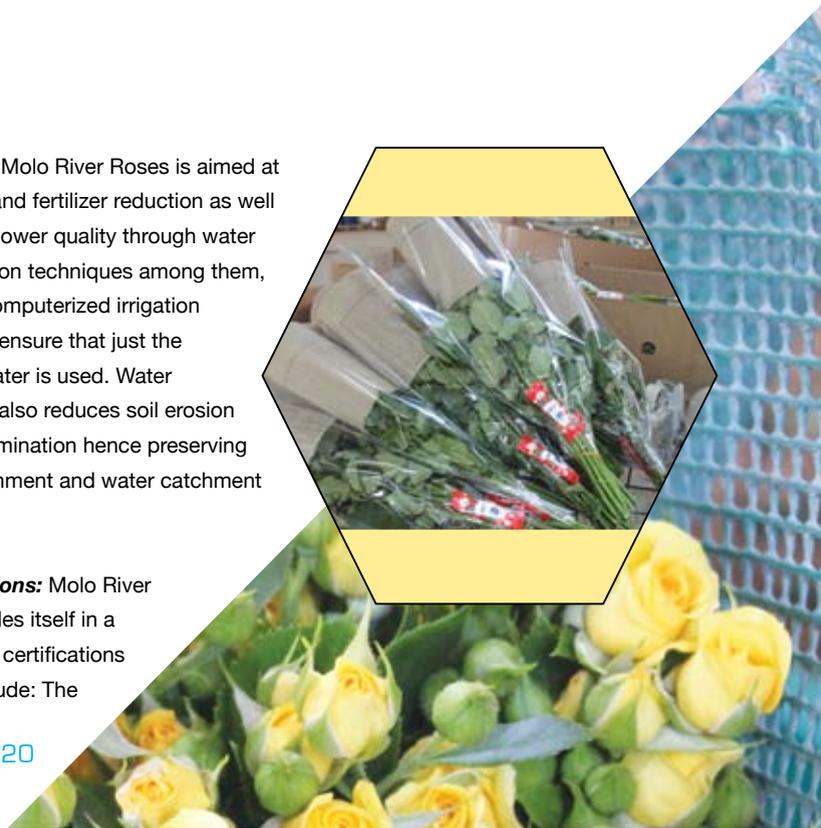
Crop Production

Operations: Molo River Roses Ltd has set out management, guidelines on GAPS, minimal use of pesticides and fertilizers, environmental policy, social responsibility as well as staff welfare. The farm undertakes regular in-house audits in order to identify and assess any risk on constant basis and arrange a time bound action plan.

Nutrition: Molo River Roses is aimed at chemical and fertilizer reduction as well as better flower quality through water conservation techniques among them, the fully computerized irrigation system to ensure that just the needed water is used. Water Recycling also reduces soil erosion and contamination hence preserving the environment and water catchment areas.

Certifications: Molo River Roses prides itself in a number of certifications which include: The

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At Greenspan, we build winning teams through people participation, mutual respect, professional integrity & honesty.

We are flexible, customer friendly & strive hard to offer tailor made solutions for different crops and/or climate.

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**We dream,
 We think,
 We innovate,
 We build,
 We deliver!**

Greenspan Agritech, takes this opportunity to Congratulate Molo River Roses Ltd on their 10th Anniversary. We are proud to be your partner in growth.

Company Profile



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Kenya Flower Council Silver, MPS – GAP, MPS – SQ and MPS ABC.

Water Usage: Water is the lifeline of the flower industry. Production of quality flowers requires sustainable water usage. This is achieved through, installing water meters, rotors, sprays, valves and central control systems, to offer a range of technical enhancements for improved water management. Spray heads and valves have water saving regulators. Moreover, Molo River Roses harvests all rain water in a dam.

Chemical Storage: Molo River uses a number of chemicals and fertilizers. Handling these fertilizers determines their quality and effective usage. The operational policy is “First in First out” to ascertain that expired chemicals are excluded for use.

Grading: This is a very

fundamental part of the quality control of the flower production. In this stage, flowers are graded according to their quality before being packed for export. Poor quality flowers are discarded as part of waste.

Waste separation and Re-use:

There are five major sources of Flower waste grouped as follows;

- The crop residue that is composted and used as manure on the farm.
- The polythene material that makes the greenhouses that are sold to a NEMA approved contractor for recycling.
- The drip irrigation tubing, which are also sold to contractors for re-use.
- The chemical containers,

which are hazardous in nature, they are sold to Environmental and Combustion Consultants Ltd.

- The waste papers from office are sent to recycling companies.

Marketing Strategy

Molo River Roses grows 52 Varieties of roses with 60% as spray roses and 40% as standard roses. They are at 60% direct market and 40% auction market. According to Mr. Wambua, Molo River’s main market is in Europe, Russia, Middle East, U.S.A and China.

Community Social Responsibility (CSR)

Henry David Thoreau, an American naturalist, poet and a philosopher in one of his different works of art cited that, ‘goodness is the only investment which never fails.’ His fellow writer Anthony J. D’Angelo, too said, ‘without a sense of caring there can never be any sense of community.’ These wise words describe how Molo River Roses took Corporate

Social Responsibility as their mandate to care for the community and nurture the environment. The farm has availed resources for public institutions such as dispensaries and schools.

They provide water tanks for dispensaries, give bursaries to needy children, desks and build classrooms for schools in the community. The farm is a major sponsor of public days and is actively involved in environmental rehabilitation whereby they buy trees for schools and households for planting.

Environmental Sustainability

Molo River Roses uses the banana system for transportation of the flowers; this helps in reduction of emissions. The farm runs on 46% solar energy from the

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25 years of innovative cooling and freezing solutions

COMPANY PROFILE

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

Our Specialties

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

Vision

The best installation is an installation

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

PRE-COOLING

The Ideal Temperature

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

Pallet Pre-cooling with a Tarp System

We frequently apply this system to quick-

chill several pallets of pre-packaged produce at once. The pallets are placed in double rows in front of a suction wall and the top and front sides of the pallets are covered with a special design tarp curtain. Behind the suction wall is an axial ventilator, drawing chilled air through the pallets at



high speed. This ensures that all pallets are evenly chilled to the optimal storage temperature.

Pre-cooling boxes or Crates

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

Vacuum Chilling

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



***wishes Molo River Roses Ltd
a prosperous future in Kenya***

Celtic Kenya (since 1999): working towards 25 years
of innovative cooling and freezing solutions in Kenya

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Company Profile



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Patex Energy Limited takes this opportunity
to Congratulate
MOLO RIVER ROSES
on their **10TH ANNIVERSARY**
'We are proud to be your partner in growth'



Patex Energy Limited Quality and Affordable Energy

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installed solar system supplies .Again, composting of crop residue from the farm helps in making of composite manure.

Covid 19 and the War in Ukraine

During the onset of the Covid-19 pandemic, the entire flower industry had a taste of the adversity. Molo River was not exempted, the effects were felt likewise. Flower orders dropped by 20%. The curfews and the lockdowns made it impossible to reach market destinations for flowers, so Molo River Roses continued to feed the crop, but this time they cut and threw the flowers. It was a loss but for the crop it was healthy because when the markets were opening up again, there was good, well fed crop which meant that the end customer was not compromised on standards at all.

Again, unlike the trend that swung around most flowers farms during the pandemic, Molo River Roses did not lay off their staff neither did they deduct or reduce their salaries not to mention the benefits of their employees. For them, despite the anomaly brought about by the pandemic, operations went on normally.

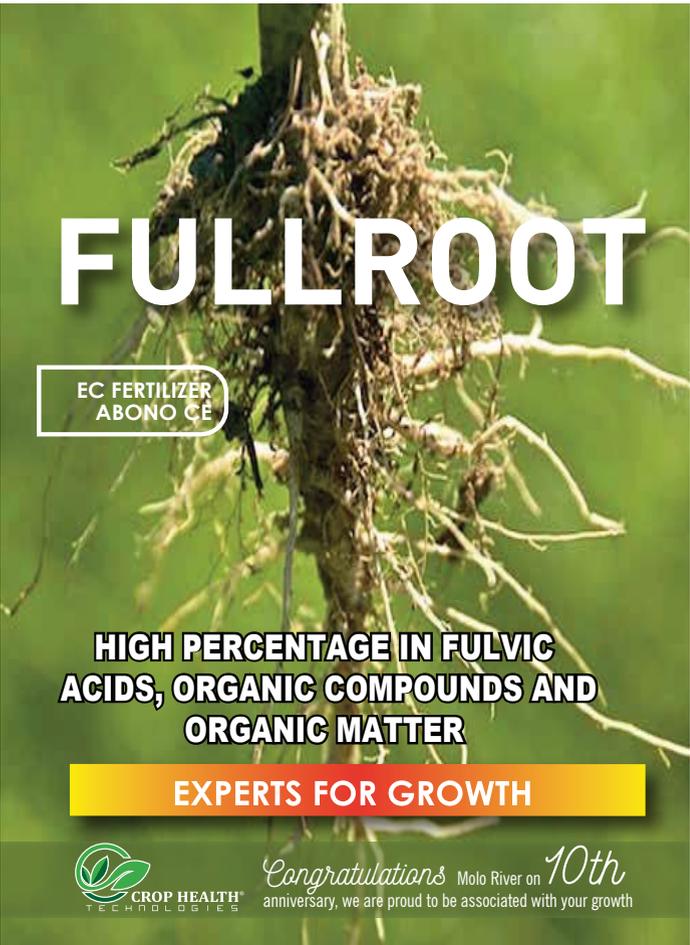
On the war in Ukraine, It is true that one of Molo River Roses' markets is Russia; therefore, they are directly affected by the ongoing war in Ukraine. Mr. Wambua said that, "Though a major market destination, the management decided to move the products that were meant for the Russian market to other markets."

Further, the war has caused increase in prices of fertilizer, fuel, freight as well as reduced freight capacity and frequency.

Future Prospects

Molo River Roses aspires to be the best, the crème de la crème in the flower sector. They aim to produce top tier, quality flowers in order to maintain the brand name. As Ms. Paula Koros says, "More investment on dams will be the ultimate goal of the flower farm."

To conclude, Mr. Wambua had this to say, "It has been an exciting job for me transforming a bush into a flower farm. What I have learnt is that you need to plan well and have the end in your mind before starting any project. Be prepared to encounter a number of challenges."



FULLROOT

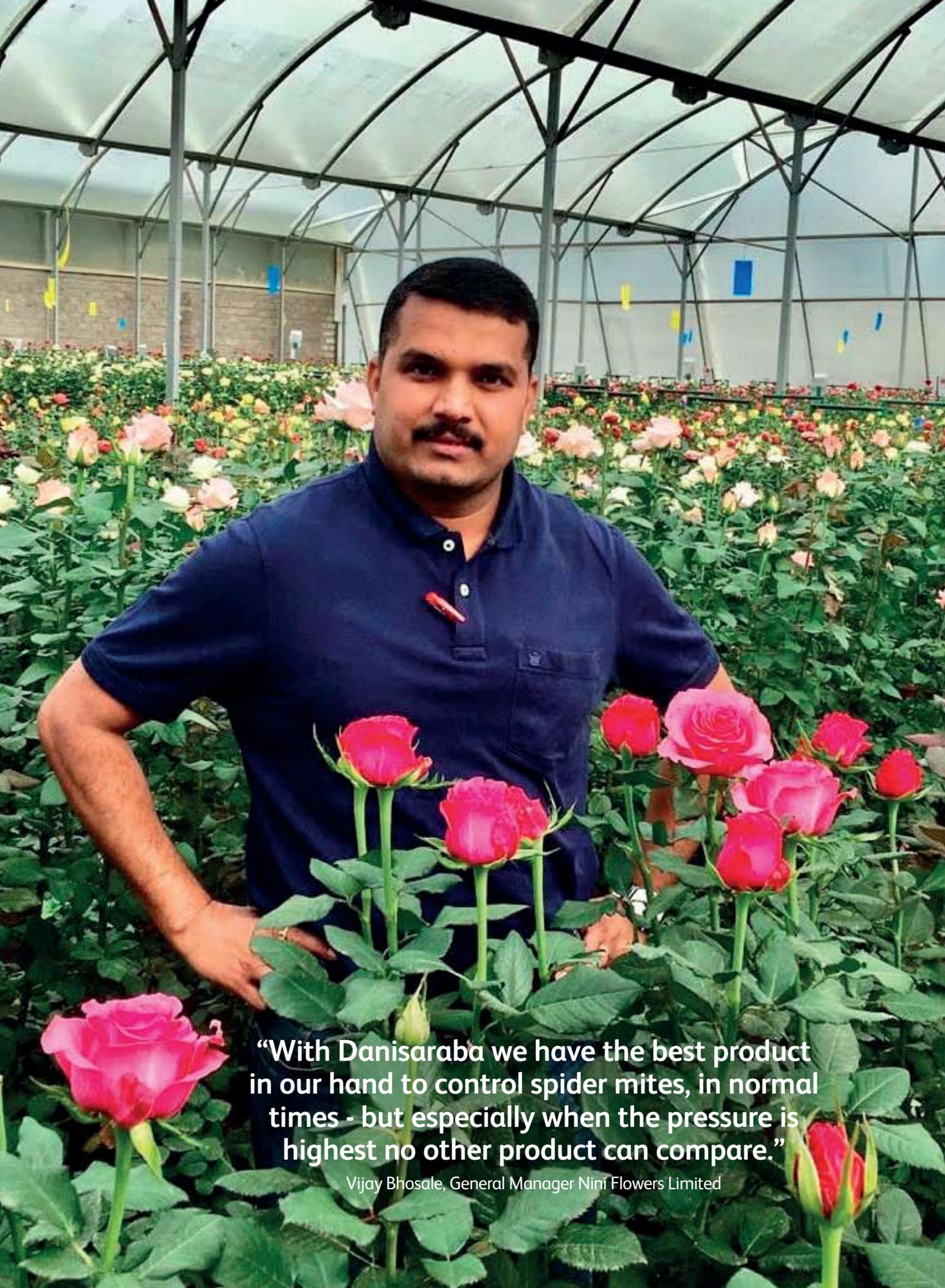
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**HIGH PERCENTAGE IN FULVIC
ACIDS, ORGANIC COMPOUNDS AND
ORGANIC MATTER**

EXPERTS FOR GROWTH

 *Congratulations* Molo River on **10th**
anniversary, we are proud to be associated with your growth





“With Danisaraba we have the best product in our hand to control spider mites, in normal times - but especially when the pressure is highest no other product can compare.”

Vijay Bhosale, General Manager Nini Flowers Limited

SAY 'GOODBYE' TO MITES WITH DANISARABA® 20 SC.

Spider mites are an economically important plant feeding pest in the horticulture industry. They cause damage by sucking sap from the leaves and severe infestation may render the crops unsellable.

Spider mites are members of the Acari (Mites) family Tetranychidae that are mostly found living on the undersides of plant leaves. They are small pest of less than 1mm in size with one female capable of laying up to 20 eggs a day and can live for 2-4 weeks laying hundreds of eggs. There are about 1200 species of Spider mites with the two spotted red spider mite (*Tetranychus urticae*) being the most common in ornamental plants.

Life cycle

The life cycle of Spider mites is influenced by climate with hot and dry conditions being favourable for reproduction and development. The rate of Mites production accelerates at optimum temperatures and as a result allows them to become quickly resistant to pesticides.

Temperature	No. of days to complete life cycle
20°C	17 days
25°C	14 days
30°C	7 days

Table 1: Effects of temperature on life cycle of Spider Mites.

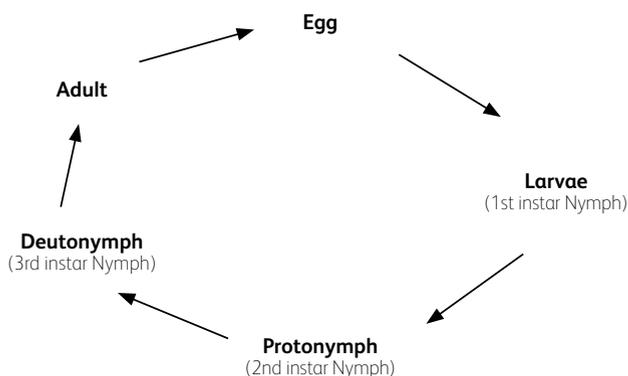


Figure 1: Life cycle of a mite.

Several methods of managing the pest are available to the grower. Cultural, Biological and Chemical control are the methods used to manage the pest. Use of predatory mites such as *Phytoseiulus persimilis* and *Neoseiulus californicus* has become common with many growers. As such, when choosing a Miticide to spray, it is always important to consider compatibility. Cyflumetofen, the active ingredient in DANISARABA® 20 SC is a novel acaricide developed by OAT agrio Co Ltd. The mode of action of Cyflumetofen is by inhibiting mitochondria complex II electron transport.

Why DANISARABA® 20 SC?

- Effective on all life stages of mites.
- Effective solution against *Tetranychus* spp, *Panonychus* spp and *Oligonychus* spp.
- Important tool for IPM program - *It is highly compatible with beneficial insects, natural enemies and predatory mites* - which are important tools in IPM programs.
- New mode of action - Useful as a resistance management tool.
- Quick knock down with long residue effect.
- Environmental friendly.

Usage

- 1 Litre per Ha (1ml/L).
- Allow for 14 - 21 days between applications.



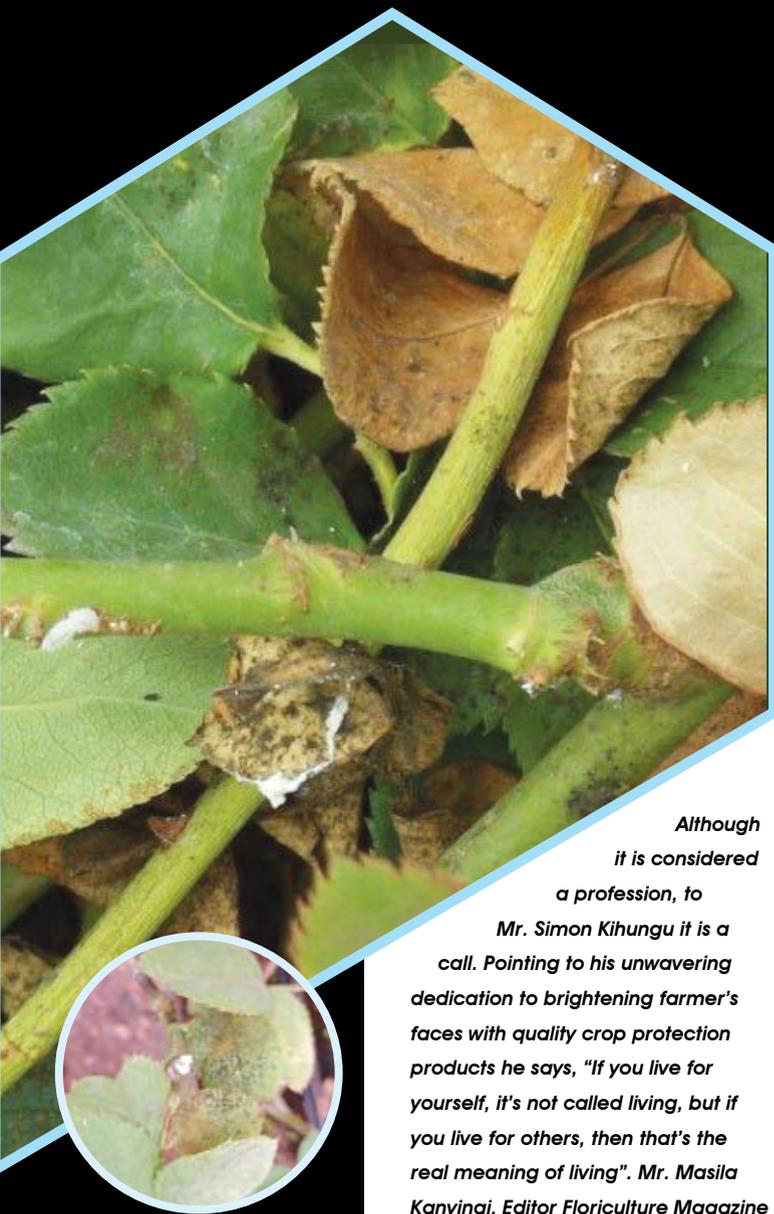
Please order DANISARABA® 20 SC via your sales managers from Elgon or Chrysal. For more info on our services and products, please contact us at: info@chrysal.co.ke



Scan to see our DANISARABA® 20 SC movie.



Mealy Bugs: The Notorious Notifiable Pests



Although it is considered a profession, to Mr. Simon Kihungu it is a call. Pointing to his unwavering dedication to brightening farmer's faces with quality crop protection products he says, "If you live for yourself, it's not called living, but if you live for others, then that's the real meaning of living". Mr. Masila Kanyingi, Editor Floriculture Magazine had a 30 mins lunch break discussion with him on mealybugs, the notorious notifiable pests.

Mealybugs are insects in the family Pseudococcidae and they are found in moist, warm habitat. Many of the common species are in the Pseudococcus and Planococcus genera.

Mealybugs damage plants with their toxic saliva, causing leaves to drop, inhibiting plant growth particularly of new shoots and creating yellow spots. Mealybugs can be difficult to treat because they hide in crevices where stems meet leaves and can reach damaging population levels rather quickly.

Life cycle

The life history of mealybugs varies depending on species. Their development progresses from egg to nymph, to adult. The Females may lay up to 600 eggs that are small, yellow and are covered by a cottony mass. The long tailed mealy bugs don't lay eggs but bear live young ones.

The female nymphs pass through three instars with a generation taking as little as one month depending on temperature. The female adults die shortly after laying all the eggs.

The Male nymphs pass through five instars. They don't feed after the first two instars and their sole purpose is fertilizing the females.

Mealybugs Damage

Once the crawler selects a feeding site, it inserts its piercing & sucking mouthpart and begins feeding on plant sap. While eating, a sticky waste substance is excreted by the insect (commonly called honeydew). This liquid adheres to leaves and provides a medium for sooty mold to colonize and grow. Sooty mould is black and eventually covers leaves and stems. This mold reduces the surface area for photosynthesis, causes aesthetic damage and reduce the crop vigor.

In addition to the sooty mould, plant damage is caused by the mealybugs sucking plant sap and the pests' toxic saliva, both resulting in distorted plant growth and premature leaf drop as well as inhibiting new shoots growth. Plant leaves also develop yellow chlorotic spots.

Management and Control of Mealybugs.

1. **Exclusion:** It's important to always inspect any planting material and keep all the infested plants away. This will limit chances of introducing the pest into the growing field or green house.
2. **Field sanitation:** Remove all the crop debris, Crown galls and any other unwanted plant parts that may harbour the pest.
3. **Nutritional balance:** High nitrogen levels will encourage soft growth which attract mealy bugs.

4. Use of biological agents.
5. Use of pesticides.
 - **Choice of pesticides:** Should encourage the survival of the natural enemies.
 - **Mode of Action:** Rotate with different chemistry to reduce chances of resistance build up.

Corteva Agriscience Solutions

At Corteva Agriscience we have a registered new chemistry product that is systemic and targeted at managing Mealybugs and other sap sucking pests on many crops.

Closer 240 SC contains the Active ingredient called Isoclast™ (Sulfoxafior) and is the sole member of a new chemical class of insecticides, the sulfoximines in the chemical class 4C. It has been developed globally for use in major crop groups, including roses. It controls economically important and difficult-to control sap-feeding insect pests including most species of aphids, mealybugs and whiteflies.

Noteworthy Features

- Effective at low use rates
- Excellent knockdown and residual control
- Excellent translaminar and systemic activity
- Effective against insect pest populations resistant to other insecticides
- Valuable rotation partner with other chemistries.
- Minimal impact on beneficial insects, including bees and natural enemies, when applicators follow label directions for use.

Mode of Action and Resistance

Available data indicate Isoclast™ active exhibits complex and unique interactions with insect nicotinic acetylcholine receptors (nAChR) that are distinct from those observed with neonicotinoids and other molecules in group 4.

Isoclast is a high efficacy nAChR agonist with low affinity for the neonicotinoids binding site. Numerous studies have been conducted to determine whether insects resistant to other insecticides are cross resistant to Isoclast. Available data for Isoclast indicate a broad lack of cross-resistance in many sap-feeding insect strains resistant to other insecticides. In several field studies, Isoclast controlled insect populations known to be resistant to neonicotinoids and to insecticides with other modes of action (e.g. carbamates, organophosphates, pyrethroids etc).

Because of its unique properties and broad lack of cross-resistance, Isoclast is a useful rotation partner with other insecticide chemistries, enhancing insect resistance management (IRM) strategies.

How Isoclast™ Active Kills Insect Pests

Isoclast™ active kills insect pests both on contact and through ingestion to provide both knockdown and residual control. Isoclast displays both translaminar movement (moves to the opposite leaf surface) and systemic movement when applied to foliage and is xylem-mobile.

Efficacy of Isoclast against Insect Pests

Isoclast provides excellent efficacy against target pests at low use rates. Proposed application rates of Isoclast range from approximately 100 to 120 millilitres of product per hectare depending on the target pest and the crop. Isoclast provides excellent control of many species of sap-feeding insects, including mealybugs, whiteflies and aphids.

Impact of Isoclast™ Active on Natural Enemies of Insect Pests

Isoclast has no significant impact on population levels of any of the natural enemies. In addition, Isoclast has no impact on beneficial mite species.

Crop Tolerance

Corteva AgriScience has received no reports of any negative plant responses or phytotoxicity from the application of Isoclast.

Isoclast™ Active and Non-Target Organisms

Isoclast™ active does not persist in the terrestrial environment and degrades rapidly to products that exhibit low toxicity to non-target organisms.



Humates: Why are they so Important?

Specifically the Benefits are:

Improved Fertiliser Efficiency

When Humates/Humic Acids are combined with any fertiliser DAP, MAP, Urea, SOP, SOA, etc., then that fertiliser will become much more stable in the soil through the binding of the product to carbon. Leaching and lockups are virtually eliminated as the plant nutrients are held in the soil and made available to the plant roots upon demand thus increasing the protein and mineral contents of most crops.

In addition, these fertilisers will be absorbed and utilised much more effectively (30

to 50% improved uptake) in the presence of humates/humic acids. Humates buffer the soils against damage, which can be caused by acid fertiliser applications.

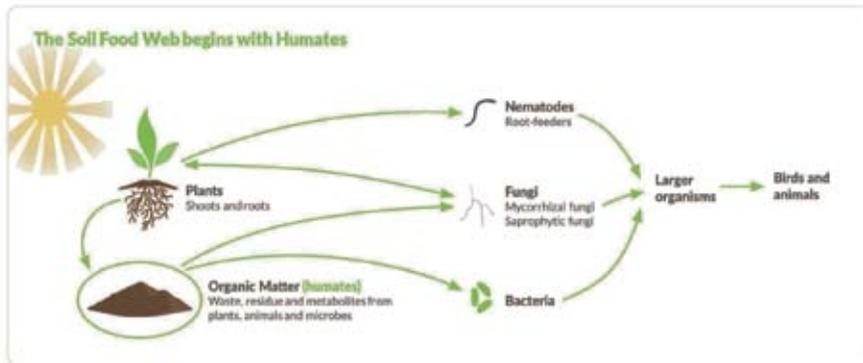
Long-Life Nitrogen

Applied nitrogen is notoriously unstable in the soil. Urea, for example, can deliver about 28% of its 48% nitrogen lode. When combined with Humates/Humic Acids however, ammonium and nitrate nitrogen (from urea) is stored on the humic colloid by the free radicals within the humic and becomes a very stable, slow releasing nitrogen source.

All 46 units are retained and the released pattern is extended up to 60/80 days thus allowing 10-40% less nitrogen to be used. Humates/Humic controls the loss of humus which can be caused through the nitrification of nitrogen (Urea) by nitrifying bacteria.



Humates



Biological Stimulation

Raw Humates with their Humic and Fulvic extracts are powerful microbial stimulants. Humic acid feeds and stimulates the Fungi component of your soil-life, while Fulvic Acid is a bacterial stimulant. Good-quality Humates contain a significant Humic and Fulvic component, so a soil application of Humates (liquid or granules) will feed and stimulate both the bacterial and fungal workforce.

Remember that these two Microorganisms can determine disease pressure and crop production, and any investment in their welfare is sound.

Disease, Pest and Frost Management:

When beneficial fungi and bacteria levels are increased by humic stimulation, then the microbial pathogens that cause disease are reduced by a process called 'competitive exclusion'. Pest pressure can be magnified by poor mineralisation and low sugar levels or carbohydrates in the plant.

When Humates/Humic is mixed with fertiliser, they dramatically increase mineral availability and uptake, and they are critical in facilitating efficient utilisation of Calcium and Phosphate – the two elements which govern the production of plant sugars, carbohydrates and protein. In turn, high plant sugars create a plant with high brix levels, thus significantly lowering the

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freezing point, and thus reducing frost damage.

Carbon-building

Research has confirmed that organic carbon (humus) is one of the important determinants of profitability in farming enterprises. For every 0.1% that you can build your organic carbon levels and c.e.c levels, there could be an associated increase in your net profit and associated increase in your land value.

Humates contain up to 69% organic carbon in their own right, but their carbon-building capacity is largely based on their bio-stimulating capacity. An activated, thriving, microbial population converts stubble and crop residues to organic carbon (humus) at a much faster rate. The faster you can convert plant matter to humus, the higher your organic carbon gains.

Hormonal Stimulation

High-production agriculture involves more than nitrogen, minerals and microbes. Natural hormones play a large role in ensuring good germination, vigorous healthy growth and prolific flowering. Organic Porphyry's, furnished by humates, assist plants in trapping light energy, then transfer the energy through the electron transport system thus accelerating the growth of plants by improving photosynthesis.

Humates contain a natural auxin-like hormone, which assists in plant functions and also stimulates beneficial microorganisms like Azotobacter that produce other growth- stimulating hormones.



Saline Management

The management of excess sodium is set to become a key issue in twenty first century agriculture. Saline irrigation water and high-sodium soils already feature as major problems in many areas. Humates have demonstrated a unique capacity to buffer sodium excesses in both water and soils.

This buffering capacity can reduce or prevent plant damage normally associated with these excesses. Humates can also have a profound effect upon soil structure, opening up compact and clay soils and aiding with the rapid exit of excess sodium and salts.

Fungi Stimulants

Humates are also a direct stimulant of the beneficial fungi called Mycorrhiza, which colonise the roots of host plants. Mycorrhizal fungi are organisms that live inside and outside root cells and help them reach for nutrients by extending long threads called "hyphae" into the soil.

The hyphae act as extensions of the root system sourcing nutrients for plants. Plants, in exchange, supply the fungi glucose

and possibly other organic materials so the fungi can grow and in turn feed the plant. Predatory fungi control pathogenic nematodes by the production of mycelia, which invade their tissue and are then digested.

There is a tremendous value in the productivity and protection of Mycorrhiza microorganisms. Increases in growth production have been documented at 1600% for citrus, 4900% for grapes and 122% for soybeans.

By the release of more or less carbon compounds into the cortical root cells, the host plant can regulate the abundance of Mycorrhizal colonization from the plant root to the soil, thus increasing the growth and intensifying plant development along with crop yields.

Toxic Cleaner:

Humates/Humic stimulate soil microbes which help breakdown and clean up a range of toxic chemicals, oils, heavy metals and sprays which can reside in soils.



Safeguarding the EU Market for Kenya's Horticultural Produce

By Mary Mwende Mbithi

The cut flower

sector employs over 350,000 people directly in the flower farms and over three million others who support the farms through provision of auxiliary services and goods. Therefore, safeguarding the sector is of great importance in order to retain the market prowess enjoyed by Kenyan growers as well as the interests of its stakeholders. The EU remains Kenya's major market for horticultural products with an estimated 70% of Kenyan flowers in the EU market.

Kenya has been able to place itself at the top of the global market share producing about 160 million stems of cut flowers yearly with overwhelmingly high expectations to hit 200 million stems this year. This is according to Yvonne Tirop, the Marketing Business Development Manager at Sian Flowers. "Kenya is almost number four and stands out as one of the mega producers of cut flowers globally," she said

Despite challenges posed by quality standards, regulations compliance and pest control, Kenya has continued to make huge strides in its trade with Europe. The interceptions on minimum residue levels as

as the well unstable regulations from the dynamic market are a setback to Kenya's cut flower export. All these bring new issues on environment, pesticides and quality.

Other challenges are as a result of tariffs that lower Kenya's competitiveness with other exporting nations of similar products in the EU market. Trade barriers in relation to logistics of flying directly into the markets, handling rights as well as inadequate airport slots in some of the major markets are also challenges that need surmounting.

Nonetheless, KFC is determined to put the best foot forward to educate the stakeholders. "We take the liberty to educate our exporters to be able to conform to the standards," said Tulezi, adding that bilateral talks between the Kenyan government and governments within the major markets would be vital. "With the support of our foreign missions, we are looking at questions of how we push up the

volumes in countries like France for instance, where we have one of our major markets, to discuss with the buyers and political players within the market." KFC also said that Kenya has aligned to the national strategy on promotion development of exports and identified about nine countries to trade with.

"Working closely with regulatory bodies like KEPHIS is of importance as it ensures that the products sent to the market are compliant to the phytosanitary measures stipulated in the market," Elizabeth Kimani, Head of Quality and compliance at Sian Flowers said.

Healthy flowers ought to be grown under the right conditions from selection of varieties, propagation, and pest control all the way to the post-harvest handling. Post-Harvest Manager, Linda Murungi puts it this way; "Anything that does not conform to the market specifications, is quarantined or rejected. Anything that meets the right standards is moved to cooling in preparation for export."

WHEN THE RIVERS RUN DRY

WATER—THE DEFINING CRISIS
of the TWENTY-FIRST CENTURY

FRED PEARCE

When the Rivers Run Dry

Water - The Defining Crisis of the Twenty- First Century'

"Oil we can replace. Water we can't - which is why this book is both so ominous and so important." (Bill McKibben, author of *The End of Nature*)

He reveals the most daunting water issues we face today, among them the threat of flooding in China's Yellow River, where rising silt levels will prevent dikes from containing floodwaters; the impoverishment of Pakistan's Sindh, a once-fertile farming valley now destroyed by the 15 million tons of salt that the much-depleted Indus deposits annually on the land but cannot remove; the disappearing Colorado River, whose reservoirs were once the lifeblood of seven states but which could easily dry as overuse continues; and the poisoned springs of Palestine and the Jordan River, where Israeli control of the water supply has only fed conflict between Israelis and Palestinians.

The situation is dire, but not without remedy. Pearce argues that the solution to the growing worldwide water shortage is not more and bigger dams, but a greater efficiency and a new water ethic based on managing the water cycle for maximum social benefit rather than narrow self-interest.

Water: A Global Crisis

Among the barrage of environmental problems we face today, from climate change, to deforestation, to pollution, there is another potential disaster looming on the horizon that journalist Fred Pearce argues is not getting enough attention—major rivers across the globe are no longer flowing all the way to their traditional outfalls.

Throughout history, rivers have been our foremost source of fresh water both for agriculture and for individual consumption, but now economists say that by 2025 water scarcity will cut global food production by more than the current U.S. grain harvest.

In this ground-breaking book, veteran science correspondent Fred Pearce focuses on the dire state of the world's rivers to provide our most complete portrait yet of the growing world water crisis and its ramifications for us all.

Pearce traveled to more than 30 countries examining the current state of crucial water sources like the Indus River in Pakistan, the Colorado River in the U.S., and the Yellow and Yangtze rivers in China. Pearce deftly weaves together the complicated scientific, economic, and historic dimensions of the water crisis, showing us its complex origins - from waste to wrong-headed engineering projects to high-yield crop varieties that have saved developing countries from starvation but are now emptying their water reserves.



This is leading to a shortage of clean, potable water for many communities and damaging riparian habitats and wetlands. In his book ***When the Rivers Run Dry: Water--the Defining Crisis of the Twenty-First Century***, Pearce takes his readers on a global journey, explaining the impact of increasing water scarcity. He explores how this dire problem came about, and posits some possible solutions.

Pearce places agriculture at the centre of the problem. Most of the water we currently use goes towards growing and processing food. Many green revolution crops are particularly water-intensive, and water is quickly becoming

posits as the most substantial quarter for water savings, he proposes farmers aim for “more crop per drop,” which can be achieved through drip irrigation, more water-efficient crops, and growing crops appropriate to the particular area’s climate. He calls for less subsidization of water prices as a way to make farmers think before they open the sluice gates. He also supports domestic conservation and better-maintained water conveyance systems. Overall, Pearce urges us to better manage the water cycle--to turn away from a dependence on diminishing groundwater resources and instead look towards rainwater harvesting. He asks us to work with nature and implement the strategies offering the greatest social benefit,

While Pearce does allude to the importance of groundwater recharge, more emphasis on this potential solution would be better in his conclusion. Placing water back into aquifers is one of the most environmentally friendly forms of water storage--it does not inundate large tracts of land, and once the water is captured it does not evaporate as it would in an above-ground reservoir. A last point for Pearce to develop is what countries are doing on an international level to regulate the use of water. Many of the rivers Pearce discusses cross national boundaries, making cooperative international political action just as important as local drives to conserve, especially as climate change makes water flows ever more unpredictable. Are there any nations that have successfully cooperated to share this vital resource in an equitable way? And what can others take from these agreements?



As major rivers worldwide dry up, economies as well as ecosystems are impacted. Addressing wasteful agricultural use is a start, but we cannot ignore urban areas as we face our global water problem. Though the bulk of our water, 70-80 percent in most estimates, does go for agricultural use, every conserved drop counts. Our current water use patterns are obviously not sustainable, and it is time to chart a new course before the negative effects become even more disastrous.

the factor limiting global agricultural output. Transporting “virtual water” in the form of food and crops also acts as a drain on an area’s hydrological resources.

not to primarily look after the self-interests of those who can afford to build dams or import water. The planet needs a “blue revolution” before the consequences are irreversible.

Economists created the term “virtual water” to refer to the water used to grow crops or manufacture products destined for export. For instance, if it takes 130 gallons of water to grow a pound of wheat, and that wheat is sold abroad, then that 130 gallons of water is being exported as well.

Pearce is especially concerned with the use of groundwater to fill the water gap drying rivers leave. While over-pumping underground aquifers is an interim stop-gap measure, it is not a viable lasting solution. He sees large dams as another technological expedient that offers short-term benefits while creating long-term problems, such as habitat destruction, population displacement, blocking the movement of silt, and flooding.

Pearce could have expanded his analysis of the impacts of climate change on the water cycle, an increasingly important question as we alter the environment around us. Potentially, global warming could cause changes in rainfall patterns, sparking massive drought in some areas and flooding in others, further impacting communities and ecosystems that are already distressed. Climate change could also cause snow-packs to melt earlier, freeing water in a surge instead of a more modulated release, directly affecting river flows.

The growing water crisis represents the greatest ecological and human rights crisis of our time. Fred Pearce has helped sound the alarm with this passionate, knowledgeable, and thoroughly researched book. A veteran reporter, Pearce cuts to the heart of the crisis and tells the human stories behind what can be soul-numbing facts. A great contribution.

In the end, Pearce calls for the standard battery of solutions. For agriculture, which he



Mr. Parit Shah,
Managing Director, Silpack

The Assignment

In September 2020, Silpack joined a group of pioneers who were tasked with transport of flowers by sea from Kenya to its main markets in Europe in an efficient and commercially viable manner.

In particular, Silpack was assigned to develop and manufacture suitable packaging for this exercise.

Why Silpack?

Silpack Industries Ltd, has been at the forefront of packaging development for flower transport in the last ten years, having developed an innovation center in Nairobi which is supported by its technical partners based in Sweden and the US.

Under the SoliQ banner, Silpack has developed cartons for air freight that have reduced costs of their customers by:

- Improving the mechanical performance of the carton and thereby reducing damage in transit
- Reducing the weight of the box to save on airfreight and reduce the carbon footprint of the package
- Developing box designs to improve pack rates and reduce the gap between the gross to net ratio of produce to packaging.

Key milestones achieved by Silpack in the last ten years include:

1. Developing flower boxes which weigh between 200gsm to 400gsm lighter than its peers without

Sea Freight for Flowers—The Packaging Voyage So Far



Key considerations for Sea freight?

Understanding the various dynamics of sea freight for fresh produce, the packaging design and material selection had to be able to cope with prolonged duration of high humidity at low temperature.

The use of active controlled atmosphere (CA) reefer containers required the air flow to be regular around and in

between the boxes.

2. Developing flower boxes for efficient palletizing to maximize on space utilization in the air craft and raising the ULD weight from 2750 kgs to 3250 kgs,
3. Ensuring material and performance consistency through the supply period, thereby allowing packaging to be a constant, and other parts of the cold chain to be challenged and improved,
4. Developing high performance SFK with customization to improve flower handling and marketing opportunities for growers

Optimal space utilization within the container and reducing the use of packaging material was also critical to ensure the success of the project.

It must be remembered that at the time of development, we were at the height of COVID-19 and freight disruptions were a regular occurrence and extended journey times were normal. What is a 24-day Mombasa to Rotterdam journey today, could take up to 35 days in 2020. Airfreight, though scarce, was still quite reasonable compared to the rates on offer today, therefore, a container carrying

Why reinvent the wheel?

The shipment of flowers by sea was not a new idea and successfully used for the shipment of flowers from South America (Columbia and Ecuador) to the US and Europe. It was therefore important to understand whether Silpack simply reinventing the wheel, or making a progressive change.

Having studied the South American export model, and comparing it to the Kenyan situation, it became very clear that a new solution was required due to the different infrastructure, prolonged journey time, different plant varieties and consolidation to achieve critical mass.

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- ❏ **High Performance**
- ❏ **Quality Assured**
- ❏ **Savings on Freight**
- ❏ **Reduce Loss of Produce**



Exceeding Packaging Expectations
Boxes, SFK, Partitions and FlowerSleeves

Silpack Industries Limited
No 2 Likoni Road, Industrial Area P.O. Box 22001 - 00400 Nairobi, Kenya
www.silpack.com

Tel: (+254 20) 8085902/3, 650928, 650943, 552063/7, 553779, 557523, 557656
Company Cell: (+254) 728 603 518, (+254) 736 519 845
Email: info@silpack.com

Packaging

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less than 6 tons of produce, would not be competitive against air-freight.

The Design and Development

Various designs and prototypes were developed by Silpack and run through simulators with its partners, until the current design was firmed up.

The key features of the design include the following:

1. Extra supportive edge and corners for load bearing
2. Ventilations on the floor of the box
3. Foldable flaps for the smooth circulation of air flow
4. Size to fit maximum number of pallets and full utilization of the container
5. Sturdy packaging to remove the need to use additional protection/SFK in the box and therefore increase the quantity of flowers
6. 18kg payload per box

The first shipments

Feedback from the first shipments was mixed. While the boxes performed well, there was also a lot of learning to be done on the packing of flowers, box assembly and management of flower chemical solutions.

Different varieties of plants also behaved very differently.

How can it go wrong?

Shipment of flowers by sea is a very unforgiving environment.

Growers are used to using various box sizes, which are more often than not, overpacked and palletised at the airport by force or compromise by the freight forwarder. They can be pushed in between boxes or put upright where a space on the ULD avails itself as the grower is already being charged on the box dimension as calculated by the scanner.

In the sea container, there is a finite dimension and all boxes have to be uniform to maximise payload and ensure air circulation. If box types are mixed up,

then the whole shipment can be compromised. Similarly, if the box is not assembled as per design, the packaging will not survive the journey and damage the produce.

The materials used to make the box are equally important. The Silpack development has been copied without too much success, because, it is not only the design but the material composition and method of manufacture that is equally important. The ingredients alone to not make a successful product without the right recipe!

It is therefore critical to ensure that packhouse teams are correctly trained by professionals on chemical treatment prior to packing, method of packing, and box assembly. If the correct protocols are maintained, growers have managed to pack 24 kgs in a box and removed all SFK from the process.

What is the current state of affairs?

According to industry players, approximately 150 to 200 containers of flowers have been shipped between January 2022 and April 2022. This is still a very small percentage compared to air freight shipments. However, the understanding and knowledge base on what it takes to ensure a successful shipment is increasing, and making the decision to move to sea freight easier.

What does the future hold?

Silpack is already working on the next version of the sea freight box to further improve the



packaging solution and should be rolling it out in the next few months.

The shipment of flowers by sea is no longer under trial as a concept. **IT IS PROVEN**, provided there are no short cuts on the protocols and the absolute minimum requirements (which are not difficult) are adhered to.

The Kenya Flower Council has intimated that they expect 50% of all flower volume to be shipped by sea by 2030. It is achievable and given the dynamics of sea freight, it is also possible to tap new markets using shipping routes which are not economical through air freight.

It is important to note that this article is focusing on the packaging element of the process. There are other protocols that need to be observed in flower treatment, consolidation, container stuffing, clearing and forwarding etc which are also critical to ensure safe and successful passage.

Parit Shah manages the development of packaging for fresh produce at Silpack.





F3

*Visit, Relax &
Discuss Business.*



New Dawn for Kenyan

Avocado Farmers

After President Uhuru Kenyatta traveled to China in April 2019, together with his host Xi Jinping secured a deal on Kenyan avocado exports to the Asian country. However, Beijing strictly required Kenya to export only frozen avocado. It had previously locked out the fresh produce from the country due to the prevalence of fruit flies locally. This led to Kenya exporting only one 20-foot container of avocado in 2020.

Most exporters were unable to meet the requirements with only one out of 100 making it according to the Horticultural Crops Directorate. The Chinese government however in previous month, allowed the exportation of fresh avocados from Kenya after years of lobbying.

Kenya completed a rigorous Pest Risk

Analysis carried out by the Kenya Plant Health Inspectorate Services (KEPHIS) and the National Plant Protection Organization of China, which identified quarantine pests of concern to China that should be controlled before export.

KEPHIS, a government parastatal whose responsibility is to assure the quality of agricultural inputs and produce to prevent adverse impacts on the economy, the environment, and human health, recently announced that it stepped up field audits and facility inspections for more than ten avocado growers and exporters planning to explore the Chinese market.

It completed the required phytosanitary assessments with its trade facilitation undertaking expected to unlock the export opportunity of locally grown fresh

avocados valued at more than \$1million (about Sh114.6 million)) annually.

According to managing director Theophilus Mutui, the regulatory agency is working flat out, to ensure that all eligible avocado growers and packhouses that meet the stringent phytosanitary standards are accorded an opportunity to enjoy the Chinese market prospects.

The KEPHIS general manager in charge of Phytosanitary Services, Isaac Macharia, at an official visit to Kakuzi Plc Orchards and Pack houses, said the national plant health regulatory agency is actively playing its part to support the export of fresh fruits to China.

Kenya's Agriculture CS Peter Munya and the Chinese Ambassador Zhou Pingjian signed two protocols to facilitate bilateral trade, mainly the export of avocados and aquatic products from Kenya to China in January this year.

According to Dr Macharia, KEPHIS has initiated registration and inspection where several avocado growers have been audited.

"The next step for us now is to share the list with our counterparts in China

for final registration,” Macharia said. KEPHIS will also undertake stringent pre-shipment inspections for all containers before they are exported to ensure compliance with the Chinese plant health standards.

The standards include the mandatory fumigation with methyl bromide and temperature control of all shipments departing Kenya for China.

Kakuzi, a major player in avocado exports has welcomed the move. “The support will play a crucial role in diversifying Kenya’s avocado export markets beyond the current European and Middle East Markets.” managing director Chris Flowers said.

While describing the Chinese market as highly discerning and quality conscious, Flowers said local avocado growers, including small scale out-growers and exporters, are well-positioned to explore the far east market as long as they stick to the stipulated regulations.

This latest developments have also excited individual farmers eyeing the export market. An avocado farmer in Murang’a is one of the hundreds of farmers who are looking forward to more exports. The former coffee farmer, ventured into avocado farming in 2015. According to him, the accessibility of the Chinese market is exciting for local farmers who are already compliant to the international standards of farming. He has documentation of his farming including risk assessment reports done by exporting companies that buy his fruits.

He however appealed to the government to make the audit process accessible to more farmers, saying he has a list of serious avocado farmers willing to be certified.

“Being able to access the Chinese market direct would mean more money for us since we would not have to go through exporting companies,” he said, “KEPHIS officials have been to my farm and know the kind of farming I do. I would wish to also be audited.”

He uses his orchard as a



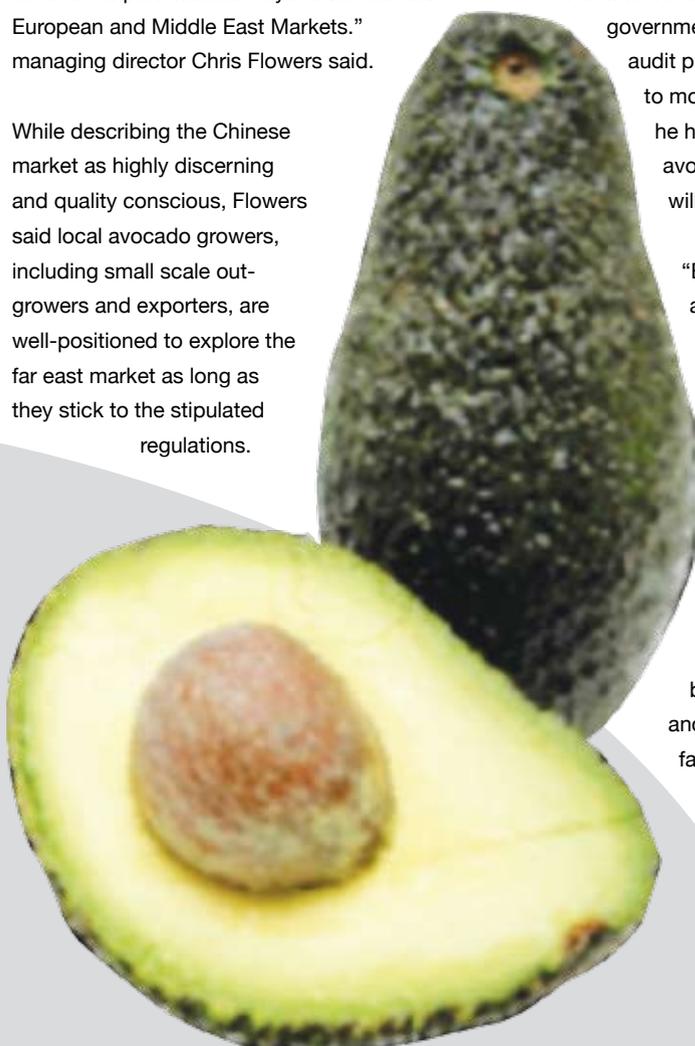
Mr. Chris Flowers, Managing Director - Kakuzi

demonstration farm to teach other farmers on proper farming practices and also acts as a collection centre for avocado buyers. When he started avocado farming, brokers would buy his fruits for about Sh5 per piece but the prices have steadily rose to up to Sh 25 per piece.

The Avocado Society of Kenya has also welcomed the developments in the sub-sector, including the re-opening of the Chinese market. According to the Chief Executive, Ernest Muthomi said: “It is not a small achievement, and we are very grateful as the avocado society, we applaud it and we have all that it takes to comply with the standards. We are expecting that we will be able to export avocado to China this season.”

He said the society is working with all stakeholders to capacity build. “The process has already begun and this is very good because the Asian market has a lot of potential for Kenya, given their population and their proximity to us as a country,” Muthomi said.

With the introduction of new high potential markets such as China, the value of horticultural exports is expected to grow, occasioning a positive economic ripple effect.



Global trends in the cut flower trade

As the COVID-19 pandemic ravaged every industry and all walks of life, the international cut flower trade

showed remarkable resilience and, at some point, unexpected outcomes.

During that period, both importers and exporters faced incredible challenges: the lockdowns imposed by governments in the majority of countries restricted staff from working and made sourcing supplies difficult; transporting flowers to shipping and distribution points became almost impossible; airfreight diminished and prices rocketed; expansion plans and innovative projects were put on hold. And yet, flower demand remained stable and even increased, flower suppliers delivered, and the industry has remained healthy in

general terms. As the world slowly reopens and activity resumes worldwide, we analyse lessons learned and emerging trends.

The numbers

An overview of global trade in cut flowers over the past decade (Fig. 1) shows significant fluctuations in total world exports, notably in 2015, when economic and political turmoil negatively affected Russian imports and fluctuating exchange rates impacted imports from Europe. Between the years 2016 and 2019 it shows a steady recovery, but before numbers could get back to pre-2015 levels, the pandemic hit, and 2020 again shows a decrease, albeit less pronounced.

Imports

A look at the top importers of cut flowers around the world in the same ten year period further yields interesting results (Fig.2).

The USA has sustained its growth pattern as the largest cut flower importer globally, a position at times disputed by Germany, but which the US has now clearly surpassed. Imports from The Netherlands have remained mostly stable over the past decade and even increased in 2020.

The Russian market continues to decline, and imports from the UK are also on a downward trend, which appeared to reverse in 2018 but continued in 2019 and 2020; Poland, on the other hand, is emerging as a new destination, although its market share is still tiny. The category “rest of the world”, composed of over 100 countries, shows significant variations but was substantially reduced in 2020. It is possible that well-established exporters in the main flower supplying countries were better able to face the hurdles imposed by the pandemic.



Exports

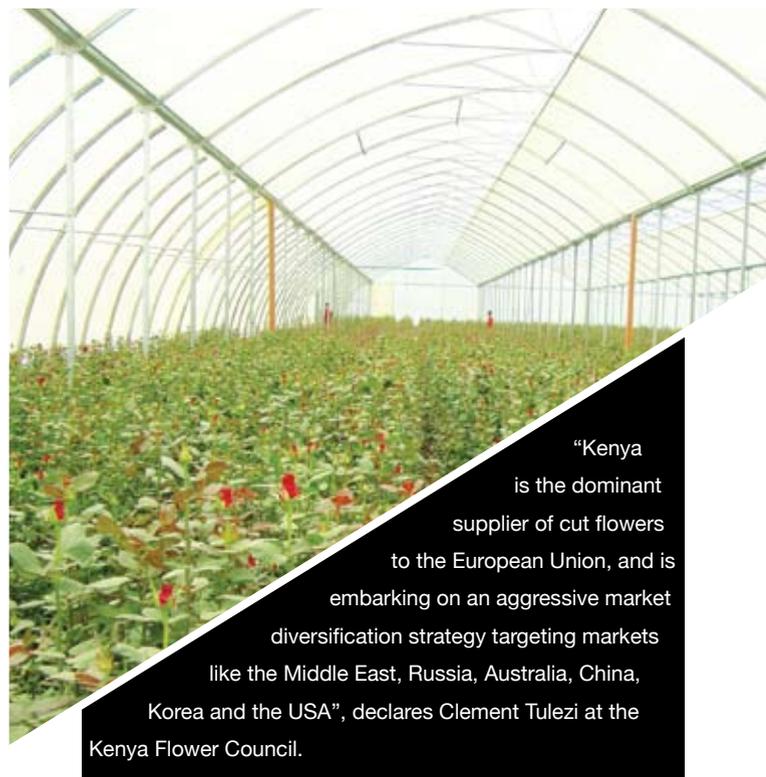
An analysis of cut flower export statistics by country also yields interesting results. The Netherlands keeps its traditional and significantly large share of the global export market (includes re-exports) but has lost ground over the past decade – from 56 per cent in 2011 to 48 per cent in 2019 and 50 per cent in 2020. Colombia, Ecuador, and Kenya keep their respective second, third, and fourth places in the international floriculture scene, and Ethiopia has secured its presence. These four countries export large quantities of roses, but there are differences in their product mix and destination markets. For example, Colombia now produces over 50 flower types. It has gained a stronghold in the bouquet business, especially in North America, while Kenyan roses have become a staple in Europe and hold a 40 per cent share of that market.

Due to strong



government support for large, long-stemmed roses from Ethiopia reach various countries, including the US, which continued to transport flower cargo throughout the pandemic. China is starting to surface, with exports valued at 125 million USD in 2020.

Belarus is virtually non-existent as a flower exporter in 2011, reported a similar figure in 2020. Although there is some local production of flowers, the country is mainly a transit hub for flowers from Colombia, Ecuador, Kenya and the Netherlands, 99% of which are destined to the Russian market, with small amounts reaching Lithuania and Kazakhstan.



“Kenya is the dominant supplier of cut flowers to the European Union, and is embarking on an aggressive market diversification strategy targeting markets like the Middle East, Russia, Australia, China, Korea and the USA”, declares Clement Tulezi at the Kenya Flower Council.

Also to be noted is the fact that shares held by previously important exporters like Spain, Belgium and Italy are shrinking, and the category “rest of the world” has lost ground, especially in 2020.

Aside from value, volumes of flowers traded are also an important indicator, especially during the pandemic when exporters worldwide reported price increases. Information on flower tonnages is not as readily available for all countries and is not measured in a standard manner (e.g. some countries report volume by weight, others by flower units. But the comparison between volume (in metric tonnes) and value (USD thousands) in four countries (Fig. 4) does not show a significant change in this respect.

Lessons, future trends

When the world came to a halt in March 2020, flower growers and exporters worldwide became highly alarmed. Kenya reported that in the first half of 2020, exports plummeted by 20 per cent, Colombia and Ecuador reported similar initial scenarios. Logistics and distribution channels, especially shipping and freight, were seriously disrupted. Thousands of events regularly using flowers got cancelled (weddings, receptions, hotels, to name a few), and millions of flowers went

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Global Trends

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to waste.

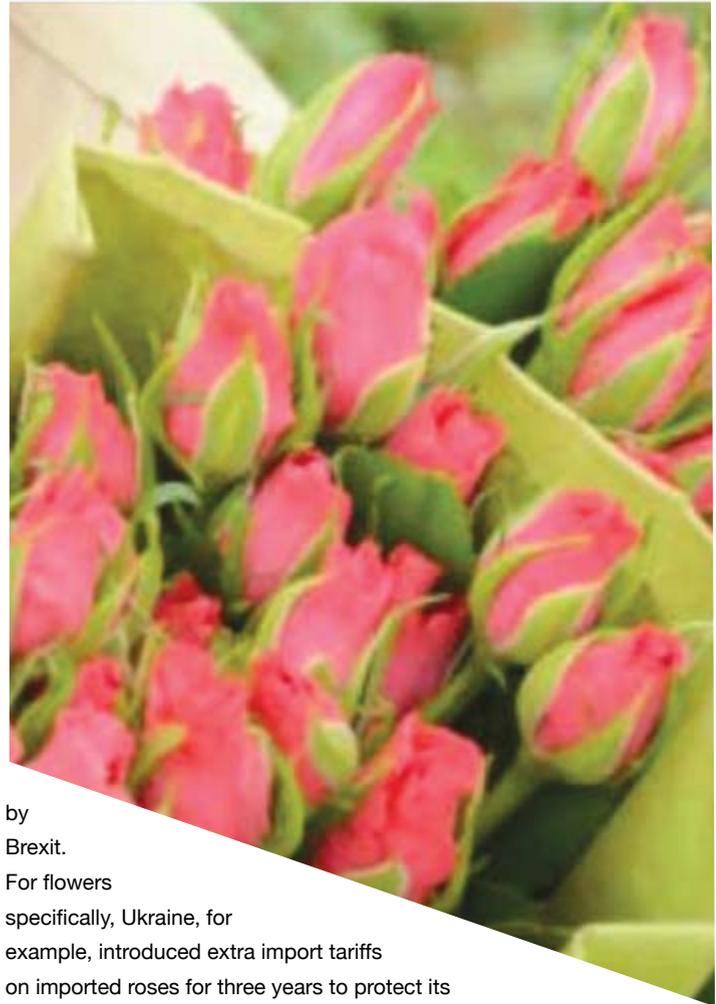
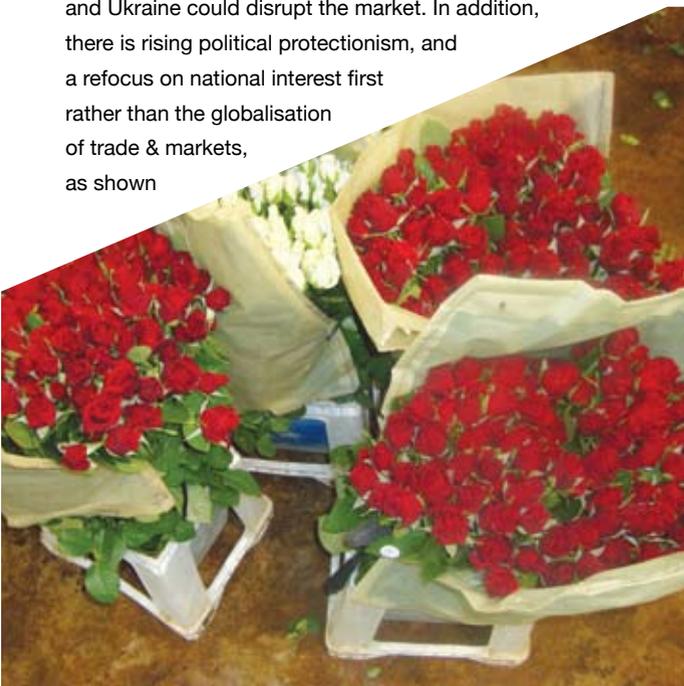
Fifteen months later, however, reductions for last year are much smaller:

- Six per cent for Ecuador
- Four per cent for Colombia
- Three per cent for Ethiopia

Kenya reports that they expect to be “100 per cent back in business”. What happened? Simply put, flower consumption increased with the lockdown. But, points out Sylvie Mamias, Secretary General of Union Fleurs, “will all the new pandemic consumers keep buying at such levels when a “more normal life” resumes? Will online sales keep growing at the same pace? Do they take market shares away from the more traditional flower outlets or do they bring in new flower consumers?”

The pandemic has also made consumers more keenly aware of environmental issues. “Source locally” has become a trend in Europe and the USA to reduce the carbon footprint and support domestic production. The impact of this, when consumers in major markets around the world rely so heavily on imported flowers, remains to be seen. Still, no doubt exporters will strengthen their efforts to produce sustainably even further.

On another front, points out Sylvie, political turmoil in various countries may affect flower trade: events in Belarus, Russia and Ukraine could disrupt the market. In addition, there is rising political protectionism, and a refocus on national interest first rather than the globalisation of trade & markets, as shown



by
Brexit.

For flowers specifically, Ukraine, for example, introduced extra import tariffs on imported roses for three years to protect its domestic producers from “unfair competition”. This action could impact nearby markets such as Russia and, consequently, raise imports from Africa, South America and the Netherlands.

Hard as it is to predict the future, flower exporters remain optimistic at this time and want to show their resilience. “We are already seeing an 18 per cent increase growth in flower exports this year with respect to last year,” says Carolina Pantoja at ASOCOLFLORES, the Colombian Association of flower exporters. “We are reaching new markets, developing sea freight for our flowers and strengthening our sustainability initiative”, reports Daniela Contreras from EXPOFLORES Ecuador. “Kenya is the dominant supplier of cut flowers to the European Union, and is embarking on an aggressive market diversification strategy targeting markets like the Middle East, Russia, Australia, China, Korea and the USA”, declares Clement Tulezi at the Kenya Flower Council.

Breeders Gather to Discuss IP Challenges in the CIOPORA AGM 2022

Over 100 breeders, lawyers and IP experts from over 20 countries met in Cologne, Germany to discuss the latest challenges in IP protection for plants and how to increase the enforcement of the rights worldwide.



Group Photo

Essentially Derived Varieties (EDV), the key role of China on Intellectual Property (IP) matters, and new market opportunities with Cannabis, were just part of the vogue subjects discussed during three days at CIOPORA's 61th Annual General Meeting (AGM), one of the most important instances to learn and know about the last trends of breeders' innovations and Intellectual Property protection.

After two years without the possibility to join in-person due to Corona regulations, over 100 breeders, lawyers and IP experts from over 20 countries gathered in Cologne, Germany to discuss the latest challenges on IP protection for plants and how to increase the enforcement of the rights worldwide.

"I am delighted with the enthusiasm of our members to be part of the first after-Corona CIOPORA AGM. More than 100 like-minded people came together in Cologne and were provided not only with useful information about IP Protection but also many networking possibilities," says the Secretary General of CIOPORA, Dr. Edgar Krieger.



Meeting in Progress

The three days journey started with The CIOPORA Academy, a full day of lectures about IP, Enforcement, PVR, among others. During the morning of the second day, the attendees had the opportunity to discuss in small thematic groups the main concerns of different sectors such as Cut Roses, Fruit and Ornamental Flowers.

In the afternoon, an internal discussion took place between the members of the association in which they gave the green light for further work on the creation of a Breeders' Enforcement Agency (B.E.A.). "The idea is to establish and offer highly qualified enforcement services to breeders; working with well-qualified parties to ensure breeders have access to consistent, and pragmatic support in the enforcement of their IP Rights," says Dr. Krieger.

The AGM 2022 ended with an IP & Enforcement Symposium with 11 speakers from different countries addressing key core issues for the industry like Enforcement, New Breeding Techniques, IP Development in China and the USA, Plant Variety Rights in New Zealand, and many more.

CIOPORA aims to ensure that Plant Breeders' Rights are fair, effective and enforceable, enabling breeders to develop new varieties that are able to cope with a changing environment and ensure sustainably produced products for an ever-growing population.

Kenya, Netherlands sign deal to Transport horticulture through SGR

Kenya and the Netherlands signed an agreement to facilitate export of horticulture through the Standard Gauge Railway (SGR).

James Macharia, cabinet secretary in the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works told journalists in Nairobi that the deal involves the development of a cool logistics corridor on the railway system for transportation of fresh produce to the port of Mombasa for onward export to Europe. "To make the railway system ready for transporting refrigerated fresh produce, Kenya Railways Corporation has embarked on re-modification work to install reefer plug-in points for the containers," Macharia said.

According to the ministry of transport, Kenya's key gateway the port of Mombasa as well as the SGR stations will be equipped to support freight of frozen horticultural products in order to enhance international trade. "The SGR network has the capacity and speed required to transport frozen

fresh produce to the port of Mombasa from any consolidation center along the rail line," Macharia said.

Liesje Schreinemacher, Netherlands Minister of Foreign Trade and Development, said that her country is committed to creating a sustainable sea freight solution for fresh produce that will reinforce Kenya as a regional hub for handling perishable goods.



Kenya Says Russia-Ukraine Conflict has Dimmed Flowers Export

The ongoing Russia-Ukraine conflict has negatively impacted Kenya's flowers export. Clement Tulezi, CEO of Kenya Flower Council (KFC) said that orders for cut flowers and ornamental plants to Russia and Ukraine have been canceled since the start of the war. "We have not been able to ship flowers and our fear is that we could lose the market if the Russia-Ukraine crisis is not resolved," Tulezi said during a telephone interview with Xinhua in Nairobi, the Kenyan capital.

According to KFC, Kenya exported to Russia and Ukraine cut flowers and ornamentals valued at approximately 18 billion shillings (155 million US dollars) in 2021. Data from the Kenya National Bureau of Statistics indicates that the east African nation exported approximately 210,000 tons of flowers worth 952 million US dollars in 2021, making the fresh produce among the top foreign exchange earner alongside tea, diaspora remittances and tourism.



SGR

Ojepat Okisegere, CEO of Fresh Produce Consortium of Kenya, said that flower exports to Russia were stopped when the country was excluded from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) payment platform.

"Our exporters can no longer receive payments from Russia hence we cannot sell to them," Okisegere said. He noted that the flower sector has also been affected by the Russian trade blockade as the country is also a key source of Kenya's fertilizer imports.

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
AAA- Flowers-Simba	Roses	Rumuruti	Anil	0758349471	anil@aaagrowers.co.ke
AAA- Flowers -Chui Farm	Roses	Timau	Phanuel Ochunga	07522506026	fanuel.ochunga@aaagrowers.co.ke
AAA-Simba Farm	Roses	Rumuruti	Anil	0758349471	anil@aaagrowers.co.ke
Across Agriculture Ltd	Herbs	-	Emily Chepkemoi	0729080186	chep28@gmail.com
Africalla Kenya Ltd	Cuttings	Eldoret	Meindert	-	meindert@africalla.com
Africa Blooms	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Afriscan Kenya Ltd	Hypericum	Naivasha	Charles Mwangi	-	-
Agriflora (K) Ltd		Nakuru, Njoro	Charles Mulemba	0721311279	cmulemba@sianflowers.co.ke
Aquila Development Co	Roses	Naivasha	Prashant Takate	0799356002	gm@aquilaflowers.com
Baraka Roses/ Mumi Flora	Roses	Ngorika	Simon Blinco	0723234927	simon@barakaroses.com
Batian Flowers	Roses	Nanyuki	Rakesh	0724631299	
Beautyline	Flowers	Naivasha	Peter Gathiaka	0721392559	peter@beautyli.com
Big Flowers	Roses	Timau	Gideon Waweru	0721178974	gideon@fontana.co.ke
Bigot Flowers	Flowers	Naivasha	Kakasaheb Jagtap	0722205271	jagtap.kt@bigotflowers.co.ke
Bila Shaka Flowers	Roses	Naivasha	Joost Zuurbier	0722204489	bilashaka.flowers@zuurbier.com
Black Petals	Roses	Limuru	Nirzar Jundre	0722848560	nj@blackpetals.co.ke
Bliss Flora Ltd	Roses	Njoro	Appachu Sachin	0789101060	appachu7@yahoo.com
Bloom Valley	Roses	Salgaa	Ramnath Sarbande	0798190511	ramnath.sarbande@xflora.net
Blooming Dale Roses Kenya Ltd	Roses	Nanyuki	Sunil	0718991182	info@bloomingdaleroses.com
Blooming Africa	-	Gilgil	Bert	0722204309	bert@blooming-innovations.com
Buds and Blooms	Roses	Nakuru	Shivaji Wagh	0720895911	shivaniket@yahoo.com
Carzan (K) Ltd KS	Summer flowers	Salgaa	Stanley Rotich	0721931710	stanley.rotich@marginpar.biz
Carzan (K) Ltd ST	Hypericum, solidago	Sobea	Thaddeus Adung'o	0716019094	thaddeus.adung'o@marginpar.biz
Carzan - Molo	Carnations	Molo	Charles Chelule	0728784081	charles.chelule@marginpar.biz
Charm Flowers	Flowers	Athiriver	Ashok Patel	020 352583	ashki@charmflowers.com
Chestnut	Vegetables	Naromoru	Gabriel Kiai	-	gabriel.kiai@aaagrowers.co.ke
Colour Crops	Hypericum	Nanyuki	Kennedy Wanyama	0716389472	colourcrops@tmu.com
Colour crops	Summer Flowers-	Bahati	Patrick Kipkurui	0727806184	bahati@colourcrops.com
Colour crops	Flowers	Naivasha	Geoffrey Mwaura	0722200972	nva@colourcrops.com
Credible Blooms	Flowers	Rumuruti	Eliud Njenga	0722382859	eliud@pigeonblooms.com
Dale Flora	Roses	Mogotio	Ajay Sutar	0711102266	ajay.sutar24@gmail.com
Desire Flowers	Flowers	Isinya	Rajat Chaohan	0724264653	rajatchaohan@hotmail.com
De ruiters	Breeder Roses	Naivasha	Fred Okinda	0722579204	Fred.okinda@deruiter.com
Double Dutch	Cuttings	-	Pharis Wainaina	0728207661	
Dummen Orange	Flowers Breeders	Naivasha	Bart Engels	0759069896	b.engels@dummenorange.com
Eco Roses	Roses	Salgaa	Madhukar Bhalerao	0799555440	Mbhalerao.eco@btfgroup.com
Elbur flora- kimman	Roses	Nakuru	Daniel Moge	0721734104	kimmanexp@gmail.com
Enkasiti Thika	Flowers	Thika	Tambe Sabaji	0734740202	enkasiti@gmail.com
Equinox	Flowers	Nanyuki	Harry Kruger	0707266956	harry@equinoxflowers.com
Everest Flowers Ltd	Flowers	Mt. Kenya	Victor Kibore	0700416334	-
Everflora Ltd.	Flowers	Thika	Ghanshyam Dusing	0721638005	manager1@everflora.co.ke
Evergreen Crops		Nairobi	Arun Singh	0721941009	arun@evergreencrops.com
Exotic Peninah	Roses/ Carnations	Athiriver	Dan	0734626942	dan@exoticfields.com
Fairy Flowers	Flowers	Limuru	Sylvester	0753444237	sylvesterkahoro@yahoo.com
Fairy Flowers	cuttings	Limuru	Kennedy Kamau	0712204894	kenreal07@gmail.com
Fides Kenya Ltd	Cuttings	Embu	Bernard Marindany	0726 366 752	B.Marindany@DummenOrange.com
Finlays- Lemotit	Flowers	Kericho	Japhet Langat	0722 863527	japhet.Langat@finlays.co.ke
Fontana Ltd - Akina farm	Roses	Njoro	Mahendra Patil	0798254199	mahendra@fontana.co.ke
Fontana Ltd - Ayana Farm	Roses	Mau Narok	Osman	0712933710	osman@fontana.co.ke
Flamingo Horticulture Farm	Flowers	Naivasha	Peter Mwangi	0722204505	peter.mwangi@flamingo.net
Flamingo -Kingfisher Farm	Flowers	Naivasha	Elijah Getiro	0722873539	elijah.getiro@dudutech.com
Flamingo - Osprey		Naivasha	Jacob Wanyonyi	0722773560	jacob.wanyonyi@flamingo.net
Flamingo -Siraji Farm	Carnations, Roses	Nanyuki	Peris Muturi	0729050116	Peris.Ndegwa@flamingo.net
Flamingo -Ibis	summer, vegetables	Nanyuki	Margaret Mumbi	-	-
Flamingo Flora	Roses	Njoro	Sam Nyoro	0721993857	s.ivor@flamingoflora.co.ke
Flora ola	Roses	Solai-Nakuru	Lucas Choi	0721832710	lucas.choi@floraola.co.ke
Flora Delight	Summer flowers	Kiambu/ Limuru	Marco	0710802065	marcovansandijk@yahoo.com
Florensis Ltd	Cuttings	Naivasha	Simon Mwangi	0721519470	simon.mwangi@florensis.com
Florenza Ltd	Roses	Solai	Yogeesh	0737453768	farm.florenza@megaspingroup.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Fresh Gold Flowers Ltd	Flowers	Mt. Kenya	John Karimi	0721622294	karimi@freshgoldkenya.co.ke
Gatoka Roses	Roses	Thika	Herman Njuguna	0728 854 844	info@gatokaflores.com
Golden Tulip	Roses	Olkalao	Umesh Choudhery	0739729658	umesh.gftl@btfgroup.com
Groove	Flowers	Naivasha	John Ngoni	0724448601	groovekenya@gmail.com
Hanna Roses Ltd	Roses	Thika	Kadlag Palaji	0723149968	kadlag.paraji@hannaroses.com
Harvest Ltd	Roses	Murungaru	Julius Oloo	0721465853	oloo@harvestflowers.com
Harvest Ltd	Roses	Athiriver	Julius Oloo	0721465853	oloo@harvestflowers.com
Harvest Ltd	Roses	Olkalou	Julius Oloo	0721465853	oloo@harvestflowers.com
Heritage Flowers Ltd	Roses	Rumuruti	Sailesh Kumar	0722203750	hfl.srk@gmail.com
Highland plantations	Cuttings & Herbs	Olkalau			production@highlandplants.co.ke
Imani Flowers	Summer Flowers	Kabarak, Nakuru	Raphael Otieno	0792302466	raphael@imaniflowers.co.ke
Interplant Roses	Roses	Naivasha	Gavin Mouritzen	0733220333	info@interplantea.co.ke
Isinya	Flowers	Isinya	Rajesh	-	pm@isinyaroses.com
Karen Roses	Flowers	Nairobi	Peter Mutinda	0723353414	pmutinda@karenroses.com
Kariki Ltd- Thika	Flowers	Thika	Miriam	0720674307	kariki.production@kariki.biz
Kariki Ltd - Nanyuki	Eryngiums	Nanyuki	Richard Fernandes	062-31023/6	bondet.production@karik.biz
Kariki Ltd - Naivasha	Summer	Naivasha	Esau Onyango	0728606878	hamwe.production@kariki.biz
Kariki Ltd - Molo	Fowers	Molo	James Oluoch	0716333717	jame.oluoch@kariki.biz
Kenflora Limited		Kiambu/ Limuru	Abdul Aleem	0722311468	info@kenflora.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	jagtap@vegpro-group.com
Kongoni River Farm - Kongoni	Flowers	Timau	Kadam	0721274413	--
Kongoni River Farm - Bemack	Flowers	Timau	Balasaheb Ingwale	0717181102	balasaheb@vegpro-group.com
Kongoni River Farm - Galaxy	Roses	Naivasha	Chandrakant Bachche	0724639898	chandrakant.bachche@vegpro-group.com
Kongoni River Farm- Longonot	Roses	Naivasha	Ravi Sathe	0715173603	ravi.sathe@vegpro-group.com
Lamorna Ltd	Roses	Naivasha	Mureithi	0722238474	admin@lamornaflores.com
Lathy Flora & Fairy	-	Kiambu	John Mbaoni	0753888126	info@lathyflora.com
Lauren International	Flowers	Thika	Dilip	0720796629	laurenflowers@accesskenya.co.ke
Laurel Investment	Roses	Olkalou	Ravindra Palshikar	0740569286	ravi.lil@btfgroup.com
Livewire	Hypericum	Naivasha	Esau Onyango	0728606878	management@livewire.co.ke
Lolomarik	Roses	Nanyuki	Topper Murry	0715 727991	topper@lolomarik.com
Lobelia	Roses	Timau	Ken Mwiti	0722475785	info@lobelia.co.ke
Maridadi Flowers	Flowers	Naivasha	Jack Kneppers	0733333289	jack@maridadiflores.com
Maua Agritech	Flowers	Isinya	Kori	115355251	kori@mauaagritech.com
Mau Flora	Roses	Nakuru, Turi	Manju	0748254171	manju@mauflores.co.ke
Milenium Growers	Summer Flowers	-	Sushant Wankara	0731316000	sushant@marvelgreens.com
Molo Greens	Solidago, carnations	-			
Mt. Elgon Orchards	Roses	Tran Nzoia	Bob Anderson	0735329395,	bob@mtelgon.com
Mt. Kenya Alstromeria	Alstromeria	Meru	Miriam	0716162671	miriam@mountkenyaalstromerialtd
Mzuurie Group	Roses		Andrew Wambua	0724256592	awambua@moloriverroses.co.ke
Mzuurie Flowers - Maji Mazuri	Roses	Moi's Bridge, Eldoret	Mark Juma	0727471034	mjuma@majimazuri.co.ke
Mzuurie Flowers - Molo River Roses	Flowers	Kilelwa	Paula Koros	072241436	pkoross@moloriverroses.co.ke
Mzuurie Flowers - Winchester Farm	Roses	Karen		-	-
Mzuurie Flowers - Winchester Farm	Flowers	Bahati	Joseph Kasoso	0725696509	jkasoso@winchester.co.ke
Nini Farms	Roses	Naivasha	Vijay Bhosale	0702662297	vijay.bhosale@herburgroses.nl
Nirp East Africa	Roses	Naivasha	Danielle Spinks	0702685581	danielles@nirpinternational.com
Ol Njorowa	Roses	Naivasha	Charles Kinyanjui	0723986467	mbegu@olnjorowa.com
Oserian-Bohemian	Flowers	Nakuru	Chakravarthi Yashmith	0786143515	chakra.kuppusamy@oserialn.com
Panda Flowers	Roses	Naivasha	-	-	gm@pandaflores.co.ke
Panocol International	Roses	Eldoret	Mr. Paul Wekesa	0722748298	paul.wekesa@panocol.co.ke
Penta	Flowers	Thika	Tom Ochieng	0723904006	tom@pentaflowers.co.ke
Pendekeza	Roses	Nanyuki	James Kiiru	0708124381	tambuzi.sales@tambuzi.co.ke
PJ Dave Flowers	Flowers	Isinya	Pravin Yadav	0708920202	gm@pidave.com

FLOWER & VEGETABLE FARMS IN KENYA

FARM NAME	PRODUCT	LOCATION	CONTACT PERSON	TELEPHONE	E-MAIL
Pj Dave	Roses	Timau	Ashok Everlyn Ladkat	0702000341	fmrisingun@pjdave.com
PJ Flora	Roses	Isinya	Santos Kulkarni	0738990521	santosh@pjdaveflora.com
Plantech Kenya Ltd	Propagators	Naivasha	Idan Salvy	0702187105	idan@plantechkenya.com
Porini Flowers	Roses	Molo	Shakti Vanjimuthu	0739676998	shakti@poriniflowers.com
Primarosa Flowers Ltd	Roses	Ol njororok, Nyandarua	Peter G. Njagi	0723575461	opm@primarosaflowers.com
Rain Forest Farmlands Ltd	Roses	Naivasha	Boniface Kiama	0722780811	bkiama@fleurafrica.com
Ravine Roses Flowers	Flowers	Eldama Ravin	Peter Kamuren	0722205657	pkamuren@karenroses.com
Redland Roses	Flowers	Thika	Aldric Spindler	0733609795	aldric@redlandsroses.co.ke
Redwing Flowers	Flowers	Nakuru	Simon Sayer	0722227278	sayer@redwingltd.co.ke
Rift Valley Roses (K) Ltd	Flowers	Naivasha	Peterson Muchiri	0721216026	fm@riftvalleyroses.co.ke
Rimi Flora Ltd	Hypericum	Njoro	Richard Mutua	0722357678	richard@rimiflora.com
Riverdale Blooms Ltd	Flowers	Thika	Antony Mutugi	0202095901	rdale@swiftkenya.com
Roseto	Roses	Salгаа	Aravindra Hirario	07417791483	gm.roseto@megaspingroup.com
Sandpro Growers	Gypsophylla	Meru	Elly Okech	0727580266	elly.okech@sandprogrowers.com
Savannah international	Geranium	Naivasha	Ignatius lukulu	0728424902	i.lukulu@savanna-international.com
Selecta Kenya		Thika	Robert Khamala	0727 467 464	r.khamala@selectakenya.com
Sojanmi Spring Fields	Roses	Njoro	Senthil	0791184851	senthil.adhikesavan@bidcoafrika.com
Sunripe Farm		Naivasha	Antony	0711827785	naivasha@sunripe.co.ke
Schreus	Roses	Naivasha	Haiko Backer	-	-
Shades Horticulture	Flowers	Isinya	Ashutosh Mishra	0722972018	info@shadeshorticulture.com
Shalima Group (k) Ltd	Flowers	Nairobi	Natarajan	0738 999149	natarajan@eaga.co.ke
Shalimar Shalimar	Flowers	Naivasha	Dinkar Wandhekar	0702418174	dinkar@eaga.co.ke
Shalimar- Kabuku Farm	Flowers	Thika	Mohan Raj	0724265777	kabukufm@eaga.co.ke
shalimar- Mahee Farm	Roses	Olkalou	Natarajan	0738999149	natarajan@eaga.co.ke
Shalimar- Mwanzi Farm	Flowers	Rumuruti	Ram	0797185821	mwanziflowersfm@eaga.co.ke
Sian Flowers - Maasai Flowers	Flowers	Isinya	Nancy Kurgat	0720780322	nkurgat@sianflowers.co.ke
Sian Flowers - Agriflora (K) Ltd	Roses	Nakuru	Charles Mulemba	-	cmulemba@sianroses.co.ke
Sian Flowers - Equator Roses	Roses	Eldoret	Nehemiah Kangogo	0725848910	nkangogo@sianflowers.co.ke
Sierra flora	Roses	Njoro	Oppaso Bandgar	720070053	farm.sierra@megaspingroup.com
Simbi Roses	Roses	Thika	Karue Jefferson	0733771652	simbi@sansora.co.ke
Sirgoek Flowers	Flowers	Eldoret	Andrew Keittany	0725 946429	sirgoek@africaonline.co.ke
Solai Milmel/Tindress	Flowers	Solai, Nakuru	Vinoj J. Kumar	0737801646	solairoses@gmail.com
Sololo Agriculture	-	Eldoret	Andrew Tubei	0722728364	atubei@sianflowers.co.ke
Subati Flowers	Roses	Subukia	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers	Roses	Naivasha	Naren Patel	0712 584124	naren@subatiflowers.com
Subati Flowers (Suera)	Roses	Nyandarua	George Kimathi	0724622638	gkbuuri@gmail.com
Sunfloritech-Blue Sky	Gypsophilla	Naivasha	Patel Sushant	0725622333	info@blueskykenya.com
Sunfloritech -Tulaga	Roses	Naivasha	A Duzai Rajan	0794572232	farmmgr.tulaga@btfgroup.com
Stockman rozen	Roses	Naivasha	Julius Muchiri	0722200890	julius@srk.co.ke
Syngenta Flowers - Kenya Cuttings	Flowers	Thika	Kavosi Philip	0721225540	philip.munyoki@syngenta.com
Syngenta Flowers - Pollen	Flowers	Thika	Joseph Ayieko	0733552500	joseph.ayieko@syngenta.com
Tambuzi	Roses	Nanyuki	Benard Maina	0721860080	tambuzi.sales@tambuzi.co.ke
Terrasol	Cuttings	Limuru	Benard Adwarh	0753444230	adwarh@terrasolkenya.com
Timaflo Ltd	Flowers	Nanyuki	Simon van de Berg	0724443262	info@timaflor.com
Transebel	Flowers	Thika	David Muchiri	0724646810	davidmuchiri@transebel.co.ke
Uhuru Flowers	Flowers	Nanyuki	Ivan Freeman	0713889574	ivan@uhuruflowers.co.ke
Utee Estate	Chrysanthemums	Nairobi	Appaso Mane	0737 513 844	mane.uel@btfgroup.com
United Selections	Roses -Breeder	Ngata, Nakuru	Jeroen Van Marrewijk	700176556	vanmarrewijk@united-selections.com
V.D.Berg Roses	Flowers	Naivasha	Johan Remeeus	0721868312	johan@roseskenya.com
Valentine Ltd	Roses	Kiambu/Limuru	Joseph Kariuki	0728 093 379	joseph.kariuki@valentinegrowers.com
Van Kleef Kenya Ltd	Roses	Njoro	Judith Zuurbier		roses@vankleef.nl
WAC International	Breeder	Naivasha	Richard Mc Gonnell	0722810968	richard@wac-international.com
Waridi Ltd	Roses	Athi River	-	-	farmmanager@waridi.com
Wildfire	Roses/summer	Naivasha	Patrick Mbugua	0721639306	patrickmbugua@wildfire-flowers.com
Wilfey	Gypsophila/hypericum	Subukia	Sammy Ndung'u	0720467551	-
Wilmar Agro Ltd	Summer Flowers	Thika	Alice Muiruri	0722 321203	alice.muiruri@wilmar.co.ke
Windsor	Roses	Thika	Pradeep Bodumalla	0736 586 059	farm@windsor-flowers.com
Xpressions Flora	Roses	Njoro	Brijesh Patel	0715469732	brijesh.patel@xflora.net
Zena - Asai Farm	Roses	Eldoret	Japhet Chelal	0721770597	japhet.zenaroses@gmail.com
Zena Roses - Sosiani Farm	Roses	Eldoret	Francis Kariuki	0725444515	fkariuki@zenaroses.com

Endelea Down with Downy Mildew

Those who may be new in my life should be aware that am an occasional visitor to the local Bunge. Inside Lavaeli's (Colloquial village dialect for Raphael), the owner has made it a state of the art joint which accommodates all characters. Inside the hall villagers meet and enjoy the local Muatine. Next in a veranda with grass thatched cubicles is where the elites of the village meet. Outside the veranda is a big mabati built room, and you find the football fans who make noise all through just cheering names they cannot pronounce.

This is where you also meet the Muguka chewers who are always alert. Revellers are allowed to criss cross as long as one is not nuisance lest you meet the local bouncers whose single touch will leave you half dead. In each of these areas there is a local Bunge discussing different motions of the day. Lavaeli's is so popular that any urbanite must visit it. June was a good time to visit.

Downy Mildew Attack

After greeting Kyalii, christened chairman by the young turks, I called on sikolasitika for a bottle of Sprite Madiaba. On her way back, she was joined by Endelea who carried a bouquet of roses. "Did you fight with your wife", she asked joyfully, "give her some money she is not a rabbit to eat twigs", she added as she tried to take the bouquet. "Do not touch, they are sick, replied Endelea. After greetings, he asked, "have you seen Professor?, we agreed to meet at this time." As I was deliberating internally what Mutiso (Prof.) and the said sick flowers had in common, Chairman answered, "right behind you".

Mutiso, a consulting agronomist greeted us and whispered something to Sikola, put a Kshs1,000 note on her overcoat, then she left smilingly. "What is wrong with you, Endelea ?", Prof. asked. "I treat life flowers not dead. Let's take a cab to your farm then back. It will take us just few minutes. Chairman, have paid something for you and your friend, kindly do not leave I will be joining you later", he added. 'Can I join you', I asked. "Your wish", Prof answered. On our way out we were also joined by Juma. It was all joy as the village agriculturalists enjoyed themselves on who had chewed enough books.

"You remember when the weather man announced El Niño", Endelea asked. I never took him serious as they are fond of telling us to take our blankets outside in a sunny day only to run helter skelter after few hours. "Can you please tell me what it is all about?" Prof said. "I am tired of this hide-and-seek game," he feigned a

slight annoyance. "You are a doctor and you came to examine your patient. Maybe we can walk to one of the greenhouses and you see the crop", Endelea answered. "We start by taking history of the patient, so can you briefly tell about my patient", Prof said.

For the last one week, it has rained heavily and for rose growers, this is not some very good news. This can easily cause high humidity and prolonged leaf wetness. It does not need a crop pathologist like you to know free moisture is required for an infection to occur.

According to my sprayers, they have witnessed constant leaf wetness for a period of 6 hours in an area with a relatively high humidity. I believe this has given room for spores to germinate and infect the leaves. After spores' production, in the morning, temperatures rose and humidity fell so the spores were released into the air. By the look on his face, this did not sound very good to Prof but as a doctor he tried the best to conceal his feelings. "Maybe I can see my patient know", he said. Endelea led us into the greenhouse. We were now inside the greenhouse and I could clearly see the description on the crop was correct. Prof. went over the tiny leaves sometimes with a hand lens. Looks like *Peronospora Sparsa*. he said to Endelea in hearing of all of us. "What is that", I asked anxiously. "It is downy mildew", Prof answered. "And how can you notice it" I asked.

At infection the fruiting structures of the fungus emerge from the undersides of the leaves and create the greyish – colored, downy coating as you can see. He said while showing us one of the leaves he had cut to examine. The downy mass of spores are difficult to see without a hand lens or microscope. These spores appear on the underside of leaf lesions. A side view of an infected leaf you can notice the fine whitish mycelia near the midrib of the leaf. This is the location directly under one of the purple blotches you can also see purplish red to dark brown, irregular spots on leaves. As the disease progresses, you will see angular blotches, yellow, purple to brown, to a scorch like burn and reddened areas on sepals and stem. Small spots or long purplish areas may form on canes and may kill twigs. Infection usually occurs on young plant parts but other parts are also affected. Defoliation may occur in extreme cases.

Knowing the magnitude of the matter, Endelea had gone silent biting his lower lips as he followed the conversation. Downy mildew is a fungal disease that causes destruction of leaves, stems, and flowers. Its main species are: *Peronospora*, *Bremia*, *Plasmopara*,

and *Basidiophora*. Downy mildew is a serious problem in the ornamentals. Similar environmental conditions (i.e. cool, wet weather, high humidity) favour the development of all downy mildew species.

"So what are his chances", Juma asked weighing in the conversation.

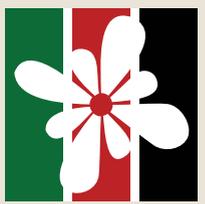
Downy Mildew is high risk pathogens. It has a Short development cycle (8-10 days under optimum conditions). It carries a high potential for reproduction (high quantities of spores) for it is widely propagated by water, wind and workers. Damage is not reversible: The damaged tissues die and result in substantial losses of harvestable stems. High genetic variability: Rapid appearance of less sensitive strains.

I will not like to go deep into the physiology of the fungus. I will try to sum up some of the practical solutions which can help you minimize the loss. As a grower you must keep an alarm when you see the first signs of change in weather or when you get the first showers. You must also check your greenhouse condition and ensure you have no leakages.

Once you are sure of the first two, it is important to let your green house breath much more efficiently than any other time. Are you irrigating? Yes but you have to cut down the metre cubic as requirements are less. Ensure no excess water moisture or extra water on the beds. Are you growing in a flush system? Make sure you go one round of thinning of all unproductive stems to control heavy canopy resulting into high humidity. If you see the first showers do not wait for the symptoms to appear for they are irreversible. Straight check your spray program and go ahead with your preventive spray. Try to do with a systemic and a contact chemical group together. It is also important you make a group of varieties mainly into three; resistant, moderate and very sensitive.

Forget the other pest and disease problem for the time. This delay in your sprays will help you avoid wetting the crop. And when spraying, time your sprays in such a way that you finish by 3.00pm to give enough time to dry. And lastly ensure no stagnate water inside the greenhouse.

The trip back to Lavaeli's was doomed as no one spoke to the other. We found chairman enjoying his drink with Avakuku. He cheekily smiled on our sight, as Avakuku shouted, it is time to take roses to our wives. Sikola, keep my sprite if you incase you read this.



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