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FOR LEADS IN HORTICULTURE

25 years Simbi Roses; Charming global markets with sustainably grown flowers



INSIDE

Kenya horticulture sector optimistic amid **coronavirus** crisis

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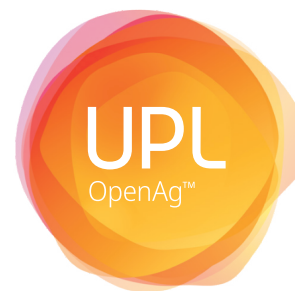
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HOPE AMID COVID-19 CRISIS

If there is something ringing in traders' mind, it is how to resuscitate their businesses. Many investments have been hit hard by Covid-19, pandemic. Horticulture has been severely affected due to perishability of produce and consideration of flowers as non-essential. But there is hope for the sector for it has started resuming back to new normal even with the virus around.

Kenya horticulture is gradually picking up following the easing up of restriction procedures and the resumption of cargo planes. Kenya Flower Council estimates that it will take a year for the industry to

recover. Exports in May rose to 65% from 20% in April and are projected to be at 80% by the end of 2020.

Kenya government have come up with various fiscal and monetary measures to help horticultural firms stay afloat. Kenya Revenue Authority started paying out Value Added Tax refunds. Value added tax have been reduced to 14%, while the country's corporation tax has been cut to 25%. Other recommendations include; establishment of economic rescue and stimulus packages and expansion of the government's cash transfer programme. These and many other steps gives hope that Kenya's horticulture will bounce back from the crisis.

Its summer in Europe and the assumption is that people will remain in their own countries and avoid unnecessary travel. This might boost flower sales as many might buy flowers to beautify their houses or they send each other flowers to uplift their spirit. If this become the case, it will be like the proverbial saying 'every cloud has a silver lining'.



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Kenya horticulture sector optimistic amid coronavirus crisis

Even as international shipment of Kenya horticulture products picks up following the gradual easing up of restriction procedures and the reopening of borders to cargo planes, Kenya fresh produce farmers and other players continue to be buffeted by disruptions across the supply chain, a jittery market

and general lack of business that has translated into lack of jobs for tens of thousands who rely on the sector for livelihoods.

Shipments of the major horticulture produce including vegetables, flowers, fruits and herbs to key destinations like the European Union have been halted since March when the novel corona virus first hit the country. Kenya acted by suspending international flights.

And as the virus ravaged every facet of the economy, the horticulture industry was losing an estimated an estimated Ksh250 million everyday as tighter restrictions in major destinations also curtailed any exports. Devastating scenes of flower workers discarding heaps of flowers for lack of markets caught global attention.

But with the European countries having started to relax restrictions

from May and a plan having been mooted by the Kenya government and the industry actors to have cargo planes export fresh produce, that daily loss came down to approximately \$100 million. Still there hasn't been any respite for farmers as they struggle with lack of airfreight and exorbitant freight prices. Even with the gradual demand in the export markets, commercial passenger flights which are known to carry

“ And as the virus ravaged every facet of the economy, the horticulture industry was losing an estimated Ksh250 million everyday as tighter restrictions in major destinations also curtailed any exports. ”



a sizeable number of Kenya's horticultural produce are still grounded occasioning limited space. Experts posit that there is currently a weekly cargo demand of 3500 tonnes against available space that can only accommodate 1,500 tonnes each week.

On the other hand freight price has gone up two times from an average of Ksh200 per kilo to Ksh400 per kilo making it unaffordable to a bulk of producers.

The East African regional trade that has been picking up over recent years has not been spared with drivers spending days in the border points as strict Covid-19 rules get enforced and few drivers get tested. These delays have seen truck drivers especially those who carry perishable goods like onions, mangoes and oranges counting losses as cargo rots. The ripple effects of the shortages have been a spike of fresh produce in major markets especially in the region's capital cities where prices for these commodities have soared by up to 90 per cent.

But the real impact of the unprecedented crisis to the horticultural industry lies in the number of jobs that have either been lost or hang in the balance for a sector that employs more than 150,000 Kenyans directly and 500,000 others indirectly. The sector has been one of the worst hit alongside tourism, education and transport.

Majority of farms unable to sustain operations have sent their workers on either unpaid leaves, terminated contracts or are mulling closing down shop which means even more job losses.

The unprecedented job haemorrhage in the sector has particularly hit women who remain breadwinners and have to take up the double responsibilities of tending to their children who

are at home following school closures. It has brought with it both financial and psychological turmoil. A recent study by Hivos on the impact of Covid-19 on women in the horticulture industry christened 'Impact of Covid-19 on Women Workers in the Horticulture Sector in Kenya' has painted a

But the real impact of the unprecedented crisis to the horticultural industry lies in the number of jobs that have either been lost or hang in the balance

picture of tens of thousands of women struggling to make ends meet even as their family burdens and responsibilities escalate.

"The impact of Covid-19 pandemic has impacted women workers in the horticulture sector socially, economically and psychologically,

with the effect spiraling to their homes. Women workers entirely rely on their meagre earnings from the farms thus the disruptions on their jobs have sabotaged their livelihoods and well-being," read a section of the report. 71 women working in 12 farms in Nairobi and its environs, Rift Valley and Mt Kenyan regions and selected from different departments ranging from production, grading, pack house, sanitation, security and propagation were assessed in the report.

"I feel tormented both mentally and physically. It is like life has turned upside down. I am doing more than double the work I used to do. And yet when I get back home, my children need my full attention," said one of the survey's respondents.

As the industry comes to terms with the real impact of the virus and the anticipated disruption of the way of doing business, the report has made a raft of policy, legal and advocacy recommendations to insulate the sector among them establishment of economic rescue and stimulus packages and expansion of the government's cash transfer programme and other safety nets to workers in precarious employments such as the horticulture sector.





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AFRODRIP LIMITED is located along Mombasa road Nairobi, just opposite the JKIA Airport and was founded two years ago. The Board of Directors all have a vast Background and knowledge in agricultural product manufacture and farming. This Experiences have enabled them to bring the company to where it is right now.

AFRODRIP'S main Vision is to bring to the local Farmer and Suppliers good quality products since all our products are ISO Certified with fair prices. our second Aim as a company is to bring new innovations and Agricultural technology from the advanced countries ie-Turkey,Israel and India. These countries are well advanced in Agriculture and greenhouse farming, borrowing a leaf from them would be an added advantage to Kenya's Food Security.

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cont. in pg 6

In terms of Long-Term Sustainability as AFRODRIP LTD not only do we trade, we have started to produce some products here in Kenya. This has enabled us to provide these items at a lower price and making them affordable to all farmers in the region.

It gives our company great Joy to contribute in a positive way in growing the Agricultural sector as it is one of the main contributors to our Country's Economy. We are committed to our vision to serve our farmers. We will keep our promise to bring more advanced technology and innovations, This has seen us partner with international companies all over the world who are ready and willing to work with us in this mission.

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Rose Downy MILDEW

By Victor Juma



Roses are the leading cut flowers in global floriculture trade. Cut roses, either planted outdoors or in plastic greenhouses are susceptible to many phytopathogens. Downy mildew is among the most serious foliar diseases which affects the quality and yield of cut roses during production.

Any damage on leaves, flower buds or stems affects quality standards and impact revenues. All rose cultivars grown in East Africa are susceptible to downy mildew, although they can differ greatly in their sensitivity.

Downy mildew is caused by the oomycete *Peronospora sparsa*. It may cause severe losses under plastic greenhouses, but in heated greenhouses the disease may not be severe. *Peronospora sparsa* infects young leaves and stems at the shoot apex, peduncles, calyxes, sepals and petals. The first signs of the disease are angularly-edged, purple-red spots that evolve into dark brown lesions followed by defoliation of affected

plants. In infected flowers and stems, purple brown lesions are common, accompanied by malformed floral buds.

Severe defoliation of infected plants reduces plant vigor while rootstock cuttings may fail to root, and the canes cannot reach the diameter required for the market. In addition, there is the possibility of spreading the pathogen through propagation materials.

The incidence of downy mildew disease increases during cool humid conditions with prolonged leaf wetness periods. Germination of *P. sparsa* sporangia has been observed to be high from 2-18°C and to decline under and over these

temperatures. No germination has been observed at 26°C. Spores are produced in great numbers on the undersurface of infected leaves in short periods of time, about three days, and for as long as one month under favorable conditions. In drier conditions, spores are often sparse and not easily noticed. Sporulation may take place in infected rose leaves before symptoms appear.

Disease development is favored by 90-100% humidity and relatively low temperatures. Therefore, rose downy mildew occurs mainly in greenhouses, rather than outdoors.

In greenhouse production of cut roses, epidemics usually



Rose leaves infected by downy mildew develop purplish red to dark brown irregular spots

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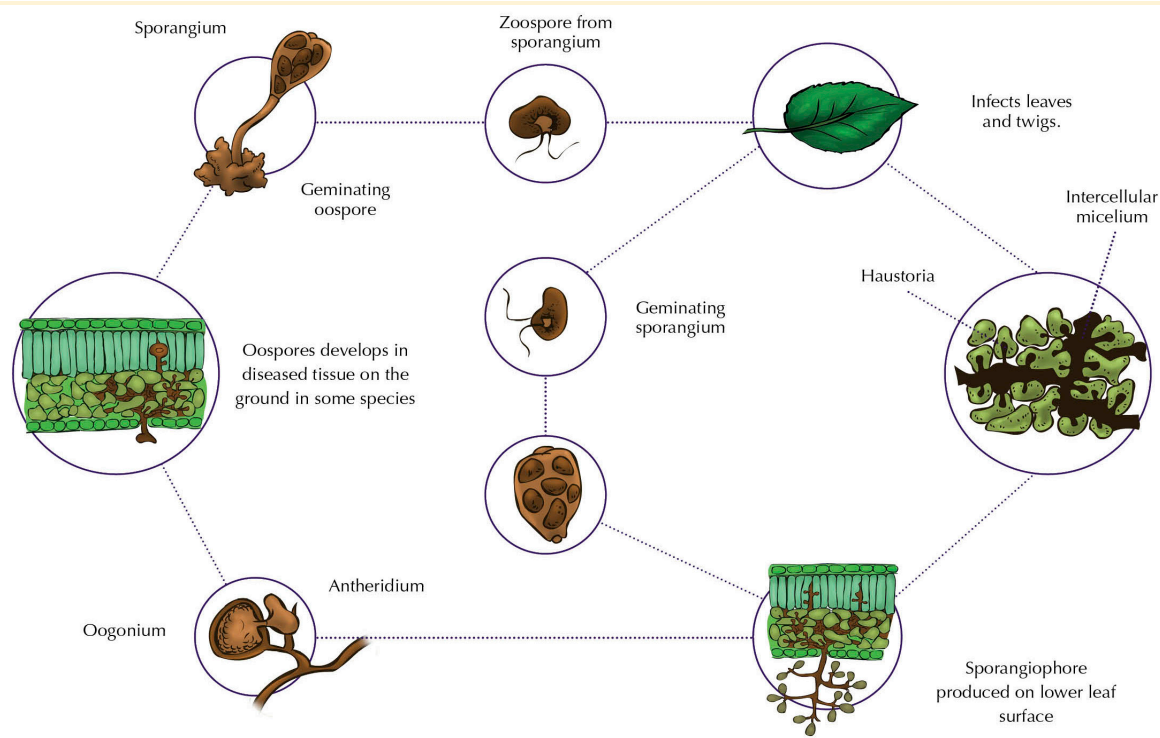
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Downy Mildew Disease Cycle

begin in localized areas of the crop. The frequent appearance of the disease in “hot spots” and the tendency for severe symptoms to appear suddenly under favorable conditions supports the hypothesis that the pathogen overwinters in the plant probably as dormant mycelium.

Under optimal conditions, *P. sparsa* can quickly spread over the whole field. Different studies have shown that roses grown under less than 85% relative humidity were not infected. These factors indicate the importance of maintaining low relative humidity levels by using heat if necessary, and of avoiding sudden temperature drops during the night, as they greatly increase relative humidity. Good ventilation and air circulation are also important. Indeed, the feasible environmental conditions that may limit the development of rose downy mildew in greenhouses seem to be those provided by hot air heating systems and motile ventilation in the roof. The

reduction or elimination of water leaks in the greenhouses is strongly recommended.

Most rose growers regularly and systematically monitor and inspect plants or areas of the crop to detect the disease and determine the adequate control method and corresponded timing when necessary. Integrated pest management (IPM) implies a multifaceted approach and stresses the importance of early pest detection.

Control measures should include cultural practices such as the removal and destruction of cuttings and symptomatic leaves along with infected fallen leaves and stems. Downy mildew crop protection programs in rose production currently involves the use of foliar fungicides that are applied preventively. Protectant sprays with fungicides are recommended when environmental conditions are ideal for the infection. Chemicals like *Daconil chlorothalonil*), *Revus (mandipropamid)* and *Ortiva (Azoxystrobin)* provide

good protection. Phenylamide containing fungicides e.g. *Ridomil Gold* and *Folio Gold* are used to control and reduce the severity of the disease. Disease management is more effective when full coverage of the underside of the leaves is achieved during spray application with contact fungicide treatments or when systemic products such as those in FRAC groups 4 (*mefenoxam*) are employed in rotation. To slow the development of resistance, it is highly recommended that label directions are followed closely and that rotations occur among different modes of action as established by the Fungicide Resistance Action Committee (FRAC).





25 YEARS SIMBI ROSES: *Charming global markets with sustainably grown flowers*

Bob Koigi

For Thika-based Simbi Roses, the passion in growing and tending to flowers is captured in its mantra 'Our Farm, our community' and in the passion of the over 500 workers who meticulously tend to the flowers in a seamless operation that translates to the harvesting of 180,000 stems-200,000 stems every day; before Covid-19 pandemic. The more than 30 hectares farm is also an environmental marvel, with enhanced landscape and a plethora of flora and fauna in what demonstrates its commitment to nature.

Having started as a two acre farm, Simbi Roses over-25-year journey is a story of resilience, celestial zeal community engagement, co-existence and inclusivity that continue to inspire management, workers and local communities and wow customers. "The dreams of the founders of the farm are as alive today as they were when they first mooted the idea. Our motto is 'Our farm, our community' with this farm being one of the institutions that represents the true face of Kenya. We have people from different communities that work here and live together and that diversity has been a key driver of our success," said Jefferson Karue the General Manager of the farm.

Simbi Roses has been a trendsetter in sustainable farm management practices having embraced elaborate interventions across water conservation, clean energy, integrated pest management systems and commitment to its staff and community.

Simbi Roses has been a trendsetter in sustainable farm management practices having embraced elaborate interventions across water conservation, clean energy, integrated pest management systems and commitment to its staff and community.

In October last year, it installed a 150 kilowatt ground-mounted solar system that consists of 454 panels and five inverters as part of its commitments to clean energy and cutting down on electricity cost. It is estimated that the system will help the farm cut carbon emissions by up to 144 tonnes each year. The solar plant powers major operations from the offices, main pumping station for fertigation, spraying and irrigation and the computerized greenhouses that regulate weather conditions digitally.

To reduce reliance on fossil fuels, the farm runs an Anaerobic Digester site for biogas production, the first of its kind in the country, where waste from greenhouses and packhouses once shredded is used to produce

biogas that fuel the pumps.

To ensure judicious use of water, the firm has adopted fertigation, drip irrigation and hydroponics technology that have tamed water consumption by up to 40 per cent while reducing the cost of fertilizer. On the other hand, Simbi Roses has invested in a detailed water harvesting system with water tapped from the farm's 33 greenhouses and directed to reservoirs for future use.

To further bolster good agricultural practices, the flower farm has also invested in an array of Integrated Pest Management innovations from pheromone traps to sticky boards that ensure a responsible and balanced pest control approach to tackling pests, diseases and other flower threats. Such huge investments have earned the farm globally acclaimed accreditations among them LEAF Linking Environment And Farming (LEAF), Fairtrade, Mileu Programma Sierteelt (MPS).

"Responsible and sustainable flower growing is a labour of love. It is a commitment we make every day and we have to follow it across all farming operations from the greenhouses to the packhouses. We have to ensure that even as we tend to these roses, we are also protecting the environment and our workers. The devotion to people and planet is what drives our business," said George Simiyu the Quality Assurance Manager at Simbi Roses.

The payoff for the farm has also been in its staff whose dedication has seen it grow its flower varieties and clientele base. In return it has invested in its workers and the community around-with majority of its neighbours being workers in the farm. It has renovated classrooms, upgraded hospitals, donated key facilities like generators and worked with the locals in environmental conservation exercises like tree planting. It has empowered its staff through various committees

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Simbi Roses; packed flowers ready for export



Simbi Roses worker holding harvested flowers ready for transportation to packhouse



Mr. George Simiyu Simbi Roses Quality Assurance Manager displaying sleeves they use to pack roses

that represent their welfare. Such committees that are specifically run by the staff span from gender and health. The Fairtrade and Waitrose committees allow the workers to decide how to utilize premiums received from the proceeds of flower sales. These premiums have gone on to educate workers' children up to institutions of higher learning, introduced a micro lending facility where workers are funded to run small businesses and trained them on technical and vocational courses.

But for an industry that continues to experience cut throat competition, tough and strategic decisions have to be made to sustain businesses. Growing 25 different rose varieties that are destined for 12 markets, majority of them in Europe where market dynamics have evolved considerably over the years, Simbi Roses understands that it has to keep reinventing and innovating to grow its market portfolio.

Mr. Karue says that while it was easy to grow roses before, a cocktail of

As the industry continues to evolve, market preferences change and global events like corona virus disruptions shape how people do business, for Simbi Roses the vision is clear. "Remain true to your company's mission and values, listen to what the markets need and do your best to deliver it, innovate as markets change and focus on customer satisfaction," Karue added.

factors in today's setup including increased restrictions, exorbitant cost of inputs, tough business regime, competition and labour costs have made it tough for the investors in the floriculture industry to recoup the expenses and make profits. "The industry has really grown, there are so many entrants, which is a good thing. But there are dynamics that continue to emerge like the high cost of doing business and market volatility that have taken a toll on the industry. Nowadays in order to survive you have to do the extraordinary."

The novel coronavirus that continues to devastate global economies has hit the floriculture industry hard as restricted movements leave growers like Simbi Roses with stock they can't export. And even as cargo movement continues to be eased, Jefferson believes it will take time for the sector to recover. "Like all the other growers we have been quite hit by Covid-19 pandemic and even as we remain optimistic, to get things to where they were before might take quite a long time or may never happen. Depressed earnings by customers and closure of flower shops means a thinning of earnings on our end," he said.

As the industry continues to evolve, market preferences change and global events like corona virus disruptions shape how people do business, for Simbi Roses the vision is clear. "Remain true to your company's mission and values, listen to what the markets need and do your best to deliver it, innovate as markets change and focus on customer satisfaction," Karue added.

BUSINESS STRATEGY:

Rethink Everything!



United Agrochemicals Limited have a rule: “We aren’t attached to process. We’re only attached to outcome.”

United Agrochemicals Limited has a clear ambition of seeking to become a market leader in the provision of Crop Protection and Solutions in the Agriculture Sector in the region. To realize this dream, the company is embracing innovation, putting much emphasis and focus on customer service and expanding its product portfolio to its branch network with the ultimate target being present countrywide. Hortfresh Journal Magazine talks to United Agrochemicals Limited on its growth ambitions. Excerpts.

United Agrochemicals Limited is growing into a leading agrochemical company in the region. How have you managed to achieve this fete?

We have become a leading agrochemical distributor because of our focus to the farmer on customer services. We endeavor to offer farmers timely products and services in the right form. We have tailored our products and services in a way that meet the farmers’ expectations. We make

our products flexible enough to accommodate the various unique needs that the farmer present to us daily. We are constantly aware that farmers have options and therefore present our products proposition as the better option. We have put systems in place to support our product offering.

What are some of the unique attributes and products that make people opt for United Agrochemicals Limited?

The first and most important thing is good customer service. Secondly, we have tailor made our products to fit each unique need presented to us. We have embraced technology and actively use technology to deliver value to the farmer. United Agrochemicals Limited is continuously introducing new products in chemical molecular formulations as well as re-engineering the existing ones as it gears up to offer value to the farmer.

What are some of the benefits that a farmer can expect?

As we believe success is not an accident but it’s a process, and

it requires efforts and loyalty. United Agrochemicals Limited is remarkably different from the rest as we keep contact with the farmer to ensure that their needs and demands are addressed to make way to real opportunities by effective response to customer satisfaction.

How big is United Agrochemicals Limited in terms of assets and geographical reach?

United Agrochemicals Limited advanced and vastly accessible location at Westlands, Nairobi County has been able to attract and open a great channel of innovative business operations to both suppliers and customers at large. Being a licensed agent and distributor of agrochemicals in Kenya, we can ensure top of the chain standards and total crop care products supply and services. We have a wide and well-equipped logistic infrastructure, delivering products to the door of our distributors and farmers countrywide.

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United Agrochemicals Limited has entered into several partnerships with manufacturers and distributors. How are these partnerships important in your growth strategy?

As an agrochemical distributor there are products and services that the farmer needs but cannot access due to regulatory restrictions. We partner with like-minded institutions to offer products and services that would ordinarily be out of reach of our customers. We want to be a one stop shop for all the customers' agricultural requirement. United Agrochemicals Limited believes in pulling together for the benefit of farmers.

You have in each time a launch of a product. What informed this innovation in product development and what are the benefits?

In the current market, the farmer is looking for convenience, our products just offer that. We look forward to offering more technology-based products and services that can be of great benefit to the farmer in terms of increased yield production and more comfortable rates in minimizing production costs to the farmer.

How effective has Pest Control Products Act been in streamlining the agrochemicals industry in the country?

The Act brings sanity in the industry. Agrochemical companies used to operate with minimal regulations, and this brings about order and acts in boosting the morale and created credibility in the industry.

Do you think PCPB is doing a good job in policing the industry?

Yes, it is. The inspection and licensing have eliminated a lot of malpractices that is in the industry. It has also given not only the manufacturers and distributors but also the farmer a boost of confidence.

"Mr. Samuel Ngetha (left), Technical Sales Representative at United Agrochemicals Limited, assisting farmers in product application in a Tomato Farm in Loitoktok Town, Kajiado County"

Do you think with increasing competition in the agrochemicals industry you will maintain your impressive growth in the coming years?

We are looking forward to our profitability growth since we continue introducing new products in our portfolio of products range among other exciting products. We continue to introduce among other new and innovative products that address the need of the suppliers (retail distributors) and the farmers.

What are your growth targets in terms of profitability?

United Agrochemicals Limited as set a target to become the leading agrochemical distributor in the country both in terms of suppliers and farmers reach and profitability. Since its commencing, we have been implementing a strategic plan and we have successfully managed to attain most of the

targets so far. Consequently, we intend to maintain the growth momentum with a target of becoming an organization for reach-out in the agriculture sector by having a footprint in every agrovet / stockist (agrochemicals supplier) and farms (large-scale and small-scale farming).

United Agrochemicals Limited has been trying to reach-out to more farmers. What has been the rate of success?

The reach-out has been a success. We are sending our team different parts of the country. We have a great and positive response from farmers whom we have offered our products and services in terms of trials and directly selling the products thus looking forward to reach-out even further. The new strategy looks at getting even to more distributors in major towns to tapping this important market.

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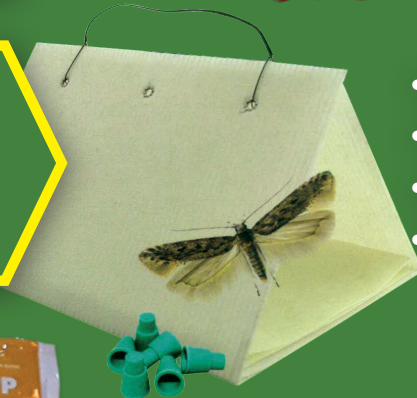
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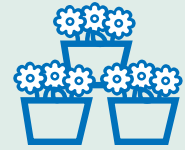
TRANSPORT

Roses are shipped all over the world for longer or shorter periods and keeping them in top condition during transport is a challenge. Our Rose Dip Service aims to prevent roses from developing Botrytis and allows for longer storage and travelling increased distances. Our Freshliner keeps roses fresh without water during transport.



GROWER

From the moment they are harvested, roses start to lose their vitality. Our RVB Clear boosts water uptake and prevents bent-neck. Our unique Rose Dip Service will prevent Botrytis, while AVB can protect roses against the effects of ethylene damage.



FLORIST

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GROWER PACKHOUSE & COLD STORE

At the packhouse and cold store roses need hydration and should stay in optimum condition. Our Rose Dip Service enables for longer storage.



CHRYSA



Happy new mothers at Florensis Kenya

In Kenya it is not common for new mothers to pump with a breast pump. In order to ensure good health and well-being their employees, Florensis Kenya completed a project in January for its breast-feeding mothers. "In line with the requirements of the Kenyan Health Act we constructed a personalized lactation room, enabling access to all resources and information required for breastfeeding for up to at least 9 months," said Florensis Kenya.

The room is well furnished and strategically located to guarantee privacy for its users. Florensis Kenya provides breast pumps (manual and electronic), sterilizing equipment, milk storage and feeding equipment. "In the absence of refrigerators at home for many employees, the ladies can use our cool boxes with ice packs to take the milk home. We also allocated time of up to an hour per day for each new mother

who requires expressing milk while at work," said Florensis Kenya.

To support the initiative, they partnered with a local non-profit organization; CAMFEB (Career mothers for Breastfeeding) who offered them professional assistance in developing a policy and information materials on the use of the facility. "Via scheduled quarterly trainings expectant and lactating employees are informed about the importance of breastfeeding, means of improving maternal and infant health as well as optimizing family planning options. As at March 2020, there were four ladies using the facility. These beneficiaries have demonstrated confidence and conversance, evidenced by their higher levels of productivity, discipline and peer support, which enables us to implement the program more efficiently" said Florensis Kenya.

In addition, they have introduced a convenience package which

includes caps and rompers for new born babies and a maternity bag as gift for the mother. To supplement the gifts, Florensis has partnered with Jacaranda health to provide SMS-based health messages to this group of employees, in order to provide information and medical referrals on health challenges that may arise during their pregnancies and lactation periods.

It is their hope that by equipping their employees with the information and tools to support them during these critical stages of their lives, they will reduce child mortality rates and promote the health and well-being of their female employees and their infants. A good action contributing to SDG 3 'good Health and Well-being', one of the six Sustainable Development Goals for Kenya Development Pillars.

Source: www.florensis.com



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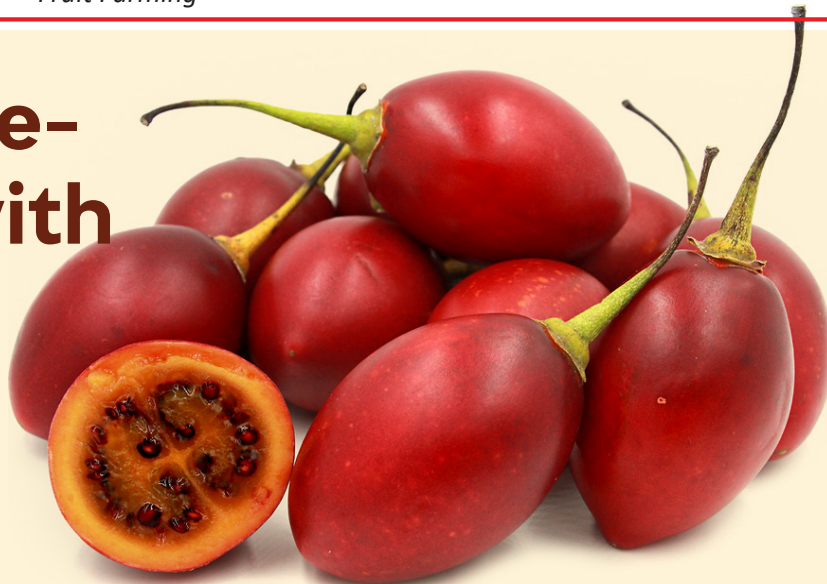
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Grafting Tree-Tomatoes with indigenous trees



The tree tomato belongs to the Solanaceae family. It is also locally known by the name Tomarillo and some group it with the tomato family, though its not a true tomato. This family also includes eggplants, capsicums and potatoes. The tree tomato fruit is an egg-shaped, a berry with many seeds the size of a regular tomato.

The original plant has shallow roots and is easily knocked down by strong winds and thus farmers have for long resorted to grafting it with indigenous trees that have deep tap roots making it more stable, easier to find water and fight against soil nematodes.

This is what James Njeru Ndirangu has been doing for the last 10 years in Kangaita, Tetu Subcounty, Nyeri. He grafts his tree tomato with the indigenous muthakwa tree. The tree grows wild and is actually a very large tree compared to the 3-5 metres that tree tomatoes grow to. In the wild, muthakwa can grow to 2-3 floors high.

He used to drive grader tractor for tarmacking roads, he decided to quit and move to farming. The transition from urban to rural areas for him

was hard. It is then he saw a friend who had planted 10 tree tomatoes.

He thought if he had 500 trees, that would help him because of the economies of scale. He currently has 800 trees. An acre takes 1200 tree tomato plants.

The various tree tomato varieties are distinguished by their particular color. There is the red fruits variety, yellow fruits variety and dark-red or black variety. The red variety which James has planted is mostly sold locally in

“The various tree tomato varieties are distinguished by their particular color. There is the red fruits variety, yellow fruits variety and dark-red or black variety. The red variety which James has planted is mostly sold locally in fresh produce markets.”



Grafted tree tomato fruits (grafted with an indigenous muthakwa tree), at Mr. James Njeru Ndirangu farm, in Kangaita, Tetu Subcounty, Nyeri.



They are planted at 4ft between plants and 5ft between rows. They require plenty of nitrogen and trace elements.

Tree tomatoes start producing fruit from 1.5 to 2 years and produce 1 to 6 fruits per cluster. James gets half a kilo tree tomatoes from each tree every 2 weeks. He harvests all year round.

It is advisable to support the branches as the weight of the fruits combined with wind might break them. Plant trees as wind breakers along the edges of the farm.

fresh produce markets. He sells his at Karatina, City Market and Ngara fruits Market. He sells a kilo at Kshs. 120.

The yellow tree tomato variety is good for preserving because of its superior flavour. The dark red or black variety is the biggest of all tree tomatoes and also of the highest quality among the three.

Tree tomato fruits are normally consumed fresh. You eat it by cutting it into two halves and scooping out the flesh. The tree tomato flesh can be used to give stews a unique flavor. It is also used in salads and desserts. It is also blended with water and sweetened



A grafted tree tomato (grafted with an indigenous muthakwa tree), at Mr. James Njeru Ndirangu farm, in Kangaita, Tetu Subcounty, Nyeri.

Tree tomato seeds should be treated against soil-borne pests, soil-borne fungal infections and seed dormancy before planting.

rainfall is between 600-4000 millimeters and temperatures range from 15-20°C and at an altitude of between 1,500m to 3,000M above sea level.

Generally, anywhere citrus fruits grow well, tree tomatoes can do well too. Tree tomatoes require soils with a pH of 5 to 8.5. Tree tomatoes in Kenya are grown in Nyeri, Kericho, Murang'a, Migori, Kakamega, Meru, Embu, Nyandarua and Kisii.

Tree tomato seeds should be treated against soil-borne pests, soil-borne fungal infections and seed dormancy before planting.



Mr. James Njeru Ndirangu at his grafted tree tomato farm in Kangaita, Tetu Subcounty, Nyeri.

with sugar to make juice. Before blending, remove the skin by pouring boiling water over the fruits and leave it for 5 minutes. This softens the skin for peeling.

Tree tomatoes were first planted in Kenya by Asians in the 1800's. Propagation is done through seeds or cuttings. The tree tomato is partial to subtropical climate where

How Growers are adapting to the new situation

Covid-19 crisis has hit almost all industries in Kenya, but horticulture sector is the most severely affected due to perishability of produce and consideration of flowers as non-essential. This has prompted the growers to innovate new ways of adapting to the new situation in order to continue with business.

Growers have taken various measures to survive in this turbulence times. To control the cost, flower farms have taken actions such as deducting their employees' salaries, reducing manpower, using minimum spray and fertigation, putting some plants and varieties on rest by cutting back to stop production till the demand picks up, among others.

In regard to safety of employees, most growers have embraced safety measures and are conducting trainings regularly, on how to avoid the spread of the virus. Temperature of people entering the farms is being checked at the gate, they are sanitizing their hands and they are washing hands regularly. Sanitizers have been installed at various farms' locations, workers are wearing mask and are maintaining distance from one another while working.

PJ Dave Group, one of the largest growers of roses in Kenya, with 240 Ha area under production and more than 5000 people working with them are hopeful that by August - September the situation will be better. "For us, our flower quality is of utter importance, so we have not to compromise on our crop quality. We have maintained the same standards of fertigation and irrigation as before the crisis. It has a cost attached



to it. We have made a conscious decision to do so as we do not want to compromise the quality of our crop in the short-run and pay the price in the long run for bad quality flowers due to poor crop," said Mr. Santosh Kulkarni, PJ Dave General Manager.

In the past few weeks' business is slowly resuming, some countries are reopening and lifting lockdowns but the major challenge has remained finding freight since there are few cargo freights. The freight charges are very high almost twice the normal price and minimal space is available for the exporters. The aviation sector is badly hit and it seems it will take some time to fully resume, probably the end of the year. Flower farms are looking into sea transport, as an alternative way to ship their flowers. When shipping by sea, one will save about 60% and vase life of 7 days after their 30-day transport is still guaranteed.

There are already several farms that are supplying the direct market, using sea mode of transport. "We have attended a conference organized by Royal Flora Holland to work out sea freight mode. We will be sending our first consignment in July first week to test it. We are quite optimistic about it. And we are thankful to Royal Flora Holland for all the help and support they have provided to us," Kulkarni added. This will bring down the cost of sending flowers and hopefully maintain a good margin for growers.

Vegetable growers are not sitting and waiting, but they have been scrambling to sell more produce locally through retailers. One of the largest exporter of premium roses, fruits and vegetables in Kenya, AAA Growers, started selling some of their produce locally last year, and they capitalized on this when Covid-19 hit.



Naivasha Horticultural Fair still planned for Sept 18-19

The Kenyan government has very slightly reduced a few of the restrictions which gives hope for the upcoming horticultural exhibition in Naivasha, the Naivasha Horticultural Fair. The 2020 edition of this outdoor event is planned for September 18-19, but they are waiting for the official go-ahead from the government. Impression of last year's edition.

"So far, bookings are good, and if we feel it is safe enough and if the government gives us the go-ahead, we will do it", says Richard McGonnell, Chairman of the fair. And he has high hopes for the fair to continue as nearly all the "international" companies have a presence/are represented in Kenya, "so there is very little outside/travel influence".



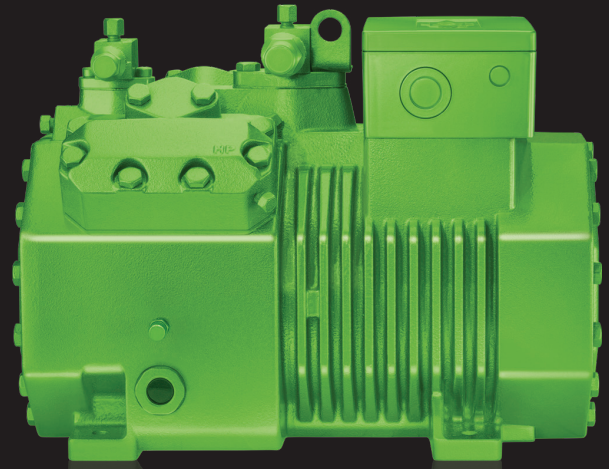
The organizers of the Naivasha Horticultural Fair, said they will wait before confirming or delaying the 2020 N.H. Fair.

For more information:
Naivasha Horticultural Fair
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SOLAR POWERED COLD ROOM; How post-harvest technology is helping cut costs on farm produce right from the farm

By Johnstone Smart



Tired of incurring huge losses of your perishable farm produce and spending much money on electricity for their preservation? Well, worry no more with the new solar powered cold room innovation by two young Kenyatta University graduate entrepreneurs providing a homegrown solution through technology. The affordable and environment friendly cold room technology helps farmers in preserving perishable produce such as tomatoes, vegetables, among others right from farms to the market. Such produce

always requires a long period of storage at a cool and regulated temperatures.

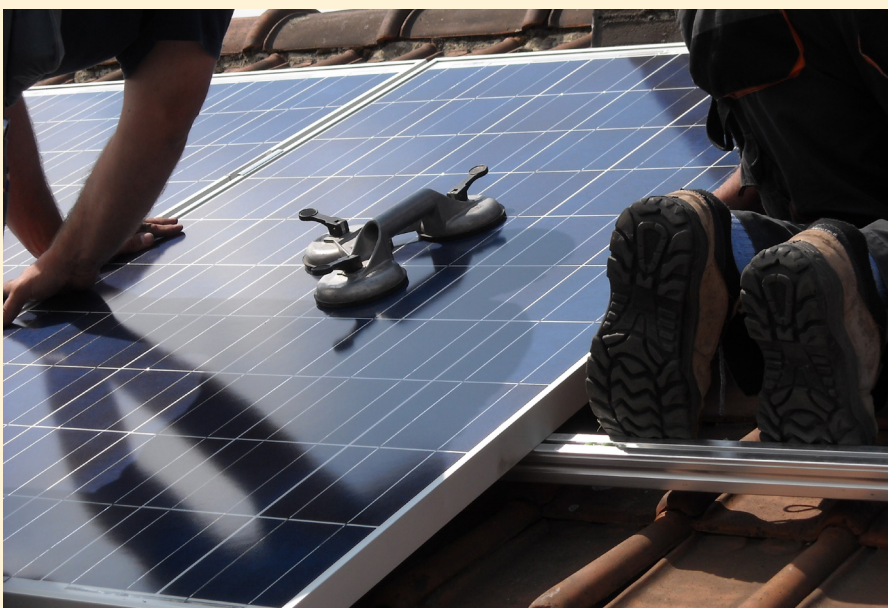
Peter Mutua, a Mechanical Engineer graduate at Chandaria Business and Incubation Center, Kenyatta University, the brain behind the innovation. He and his fellow innovator Peter Muhoho conceived the ambitious idea in fourth-year as their research project for the course. Their solar powered cold room technology is housed at the Chandaria Business Incubation Centre. Mutua, also the founder and CEO of Colreftec Solutions notes that they were so

passionate about developing the food preservation idea to help small and large scale farmers as well as businesses in the field of horticulture.

"What really motivated us was the increasingly post-harvest losses of perishable produce. I thought of something that could be of so much help to food and people, and this how we came up with solar powered cold room," Mutua says.

"We design, fabricate, install, maintain and service both fixed and mobile cold rooms. We also offer support and logistic services for perishable goods farmers, to ready - market countrywide. This enables farmers to transport their products to various markets like from their farms," Mutua added.

Apart from the solar system, a finger scanner is incorporated to enhance security of the produce to avoid unaccountability in case of loss during transportation. Mutua reveals that a client can monitor the system from wherever they are using a mobile installed application integrated system to help regulate the amount of kilograms and tonnes of product to be stored in the cold room for it to be more secure.



The cold-rooms have been tried out and their performance has been excellent. They are favorable in Sub-Saharan region where sunlight intensity is plenty throughout the year.

The cold-rooms basically preserve the produce within the set temperature by use of digital thermostat. Normally cold-rooms maintain a temperature range of (0-5) degrees Celsius.

"Ideally, by use of solar panel we harness the solar energy and store it in the battery. We do sizing of the solar equipment to ensure sufficient flow of energy during the day and night," Mutua says.

Powerful standby batteries charged during the day are fitted on the solar powered cold rooms to provide power at any given time in case of limitations. The energy stored in the battery powers the condensing unit, the security unit, as well as lighting of the bulbs during the night. The weight of load to be stored also has to be ascertained for proper estimation of the energy needed to drive the entire system. The time taken for every produce stored in the cold room further depend on the amount of energy that a particular produce carries.

The solar energy used by the cold room again varies depending on the size of the cold room and the load to be stored in it. For instance, a cold room of 6ft by 6ft by 7ft requires 0.0012.341354j. The solar powered cold room offers a lasting solution to farmers who always



experience heavy losses when their produce goes bad right from the farm during the harvesting period.

"In Kenya, according to the Kenya Bureau of Statistics, 50 percent of the perishable produce that is harvested goes to waste during transportation and so an extension of preservation period would help save a farmer's product," Mutua notes.

Moreover, tonnes of fresh produce stored depend on the size of the cold room and clients' specifications. For instance, a cold room of 6ft by 6ft by 7ft has the capability to store more than 2 tonnes of tomatoes in more than 10-15 days maintained at a temperature range of 5-6 Degrees Celsius. However, it is during this period that the client can seek ready market where the produce can be transported.

Mutua points out that the cold rooms are cheaper compared to the imported ones in the markets. He attributes their

“The cold-rooms basically preserve the produce within the set temperature by use of digital thermostat. Normally cold-rooms maintain a temperature range of (0-5) degrees Celsius.”

pocket-friendly costs to the fact that they are made locally and do not use electricity.

Mutua asserts that the electric-powered cold room of 6ft by 6ft by 7ft can cost one more than Kshs.10, 0000 monthly in electricity bills unlike the solar-powered one that is always 20 percent less.

In every business venture there has to be challenges and Mutua reveals one of the hiccup he went through.

"During the Enhancing Food Security Outreach Youth Champions (ESYOC 2019) project in Kenyatta University, Colreftec Solutions won a tender to supply one solar powered cold room in Makueni County, but while on our way the machine fell from the vehicle and got damaged. We are yet again to



Mr. Peter Mutua displaying solar batteries that power the cold room

assemble one and supply to the county," Mutua narrates.

He is optimistic that his solar powered cold room innovation offers quality foods full of nutritious value to boost the agricultural sector in the country. The engineering graduate is confident that this will eliminate hunger and malnutrition which stands high among children.

"It is eco-friendly by the virtue that it is using green energy which is renewable and farmers will not have to sell their produce at throwaway prices citing losses and the nation will feed her citizens adequately simply because a lot of the food produce won't go to waste," Mutua says.

He affirms that solar-powered cold rooms won't have any negative impact to the society as they use green energy which is harmless to human health and the environment.

Mutua states that using cold rooms will eradicate poverty through job creation to many unemployed youths including graduates interested in agribusiness.



Kenya's First Lady - Margaret Kenyatta (C), Former Agriculture CS. Sicily Kariuki (R) with Mrs Velista Wanjiru Thuo(L), at Phinna Flowers stand.

PHINNA FLOWERS

Growing & Selling Summer flowers outstandingly

By Bernard Muhia

Velista Wanjiru Thuo is one proud grandmother. She is training her family into the flower business that she started as a part-time venture back in 1985. She has been doing it informally until 10 years ago when the family registered Phinna Flowers Limited and that's when business picked up. She also brought in the daughters



and sons who have in turn brought in their children. The farm is located in Njambini, Nyandarua County.

Her second proud moment is when the farm won the Gold award for Best Small-scale farm geared towards commercialization at the 2018 National Farmers Awards. She was handed the award by H.E. President Uhuru Kenyatta.

"I wasn't expecting to win, says Velista "I was only hoping to make it to 3rd place at least" she continues. Inspectors from the Ministry of Agriculture came to her farm and asked her questions whilst seeing the farm, sat down and wrote their recommendations and then left. It wasn't until 6 months later that they called to inform her that she had won 1st place.

Later on, the farm was exhibiting at the Nyandarua County Agricultural Show at Engineer and the First Lady Margaret Kenyatta was present with area Governor Francis Kimemia. The first lady was impressed and this prompted the Governor to desire to visit the winning farm. He later visited the farm and even promised to repair a community borehole near the farm.

Her second proud moment is when the farm won the Gold award for Best Small-scale farm geared towards commercialization at the 2018 National Farmers Awards. She was handed the award by H.E. President Uhuru Kenyatta.

Since winning the award, she has gotten a lot of visitors most notably Bill Magee, a representative from the Australian Government's Department of Agriculture. Others include lecturers from Egerton University and students from Karatina University. They also train farmers who want to venture into flowers.

It all started in 1985 when a friend introduced Velista to flowers. He was growing and selling flowers and sold a few seedlings to her. When they were ready, he took her to the market to sell alongside his. She has been mixing flowers with cabbages and potatoes. She now wants to fully specialize in flowers.

She has raised her kids and schooled them with flowers, cabbages and potatoes. Her husband is a retired teacher and her biggest supporter. The farm is 12 acres

Since winning the award, she has gotten a lot of visitors most notably Bill Magee, a representative from the Australian Government's Department of Agriculture. Others include lecturers from Egerton University and students from Karatina University.

divided into small portions. They plant Craspedia, Ammy, Scabiosa, Mullicella, Erygium and Astromeria.

The flowers are packed into boxes for export and some to local market. Craspedia fits 1200 stems in a box, Scabiosa fits 1200 stems, Agapanthus fits 400 stems, Astromeria fits 300 stems and



Mr. and Mrs. Thuo, founders of Pinna Flower Ltd. displaying the trophy Pinna Farm won in 2018 Best small-scale farm, National Farmers Award, awarded by H.E. President Uhuru Kenyatta.



A worker at Pinna Flower Farm Ltd, located at Njambini, Nyandarua County.



Phinna Flower Farm Ltd. fraternity, displaying the trophy the farm won in 2018 Best small-scale farm, National Farmers Award.

"In terms of production, Craspedia we produce 25,000 stems twice a week during the high season and 6-8,000 stems during the low season. Erygium and Astromeria we produce 10,000 stems during the high season and half that amount during the low season. For Agapanthus, the white variety we produce 15,000 stems during the high season and 3,000 stems during the low season. Mullicella we plant on order and produce up to 2,000 stems as per the customer's demand," Velista said.

Erygium fits 300 stems for the Planum variety and 250 for the Anita variety.

Velista used to do a lot and would sometimes come back home past midnight after delivering flowers to the airport. She now has her family in the trade.

The low season runs from August to May and the high season from May to August. Most of their flowers end up in the local market.

The biggest challenge for the farm is black spot disease which affects most of the flowers during the cold season. The other challenge is water shortage. Despite the governor promising to repair the community borehole, the work hasn't started and Phinna Flowers is forced to undergo losses during the dry season.

The farm is divided into small portions of different flowers. Each portion is the size of a quarter acre. In one portion, Craspedia is planted and fits 11,000 seedlings. In another portion, Erygium fits 8,000 seedlings. Craspedia is usually sold fresh as balls of flowers or it can be dried and sold in Australia which prefers the dried flower balls.



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Story By Bernard Muhia

THE MYSTERY THAT IS AERIAL YAMS

Pastor Simon Ngure is a busy man. In addition to tending to his flock at the Almighty God Ministries Church in Kiriaini, Murang'a, he also tends to aerial yams on his small piece of land.

Simon was introduced to aerial yams in 2009 by two friends. At the time he was planting the Medium Altitude Climber MAX 64 bean variety. The first yam he planted produced yams the size of a fist. The difference between the aerial yam and the regular yam is that it produces yams that hang in the air from its climbing vine unlike the regular yam which has tubers underground.

Initially, he would plant the yams for domestic consumption but as they kept reproducing, he started selling. He always visit agricultural shows to exhibit and get people to learn more about the aerial yams. Sometimes he does this on invitation from various agricultural training

centers. When we spoke to him, he had just concluded exhibiting at an agricultural show at Kamweti Agricultural Training Center

The surprising thing is that some agricultural officers at these shows hadn't come across aerial yams and they would ask him a lot of questions. It is here that he realized that there was a need to start teaching farmers about the yams.

Agricultural officers also visit his farm to see how he is doing. The Divisional Agricultural Officer for Mathioya, Mr. Nyaga is one of the interested government officials.

The aerial yam is scientifically known as *Dioscorea bulbifera*. Simon is however quick to clarify that there

are edible and toxic varieties of aerial yams. The toxicity is nonetheless debatable because it can be made edible by boiling for several hours. The edible aerial yams only need slight boiling like you would with potatoes but the toxic variety needs several hours of boiling to remove the poisonous elements.

To differentiate the edible from the toxic variety, Simon gives a few pointers. The non-poisonous vine goes clock-wise around the supporting pole. The poisonous vine goes anti-clockwise around the supporting pole.

The non-poisonous vine has a round stem like a pen while the poisonous vine has a flat stem like a ruler. In one of his trips, he has ever come across a farmer in Meru County who had planted the poisonous variety and would boil it all day to remove the toxicity but Simon gave him the edible variety and he now just

consumes it like regular potatoes. In fact aerial yams taste like potatoes but a bit harder.

Aerial yams can be consumed in four ways. They can be boiled like potatoes but they are eaten without peeling. They are eaten together with their protective skin. They can also be roasted. The roasting is done by placing the unpeeled yam in hot ash. They are not roasted over an open fire like on charcoal grills. This will only remove the water from the yam reducing its size. They are also cooked in a stew just like you would with potatoes. Finally, they can be eaten raw like sweet potatoes.

Aerial yams are popular with Nigerians for whom it is a staple food. They fondly call it fufu. It is rich in potassium, B6 vitamin, manganese and vitamin C. It is also a good source of dietary fibre.

There are two types of the edible variety. There is the Golden Yellow variety and the purple variety. The Golden Yellow variety is suitable for both cold and warm climates and it has big dark green leaves. Its vine is wide and round. The purple variety is suitable for warm climates and has small light green leaves. Its vine is narrower.

Simon specializes in selling yams as seeds to other farmers. A 20kgs container (debe) can fetch Kshs. 20,000. Aerial yams are planted in holes that are 1.5ft squared. Mix well decomposed manure with black charcoal dust and with soil. Simon doesn't advocate for the use of ash or fertilizers while planting. The charcoal dust protects against bacterial wilt.

Once planted, the tuber takes 4 weeks to sprout and from there it grows 8 inches per night. When it gets to 2 metres in length, Simon advises that you can spray the leaves with milk to protect against blight and black spots. The milk is diluted with water at a ratio of one litre to ten litres of water. It is then sprayed at midday when the sun is hottest.



This dries the mixture onto the leaf providing a protective layer.

The milk is sprayed twice at an interval of 21 days. Simon tells farmers to do a small control experiment on the farm with the milk and charcoal dust remedies to test for themselves before implementing it to the entire farm.

The vines will need support from trellising posts. He advises against using wires or strings. Wires get hot in the sun which stresses the vine resting on the wire. Strings sometimes can't support the weight of the yams when fully developed.

If the farm has moles, Simon has devised a method to protect tubers. He uses buckets or other large plastic containers and plants the



tuber inside with soil. He perforates small holes on the sides for roots to get out. He then buries the bucket up to the ground level.

The aerial yam takes 5.5 months to mature in warm climates and 6.5 months in cold climates. The bulbs start appearing at 3 months and take another 3 months to mature. They start out green and turn brownish when mature and can be harvested for 4 months.

Once the four harvesting months are over, the leaves and vine dry up. After 2 months, a new shoot grows from the buried tuber. A buried tuber can go through this cycle for even 50 years. The yam's shelf-life is 6 months.



Pastor Simon Ngure tending his mysterious, aerial yams at his farm in Kiriani, Muranga County.

United Selection 2020 Bi-annual Varieties



In the month of June every year, United Selections conducts their annual selection meetings to define the new additions of newly bred varieties to the assortment of the following year. This is always taking place around the IFTEX period, in their facilities in Kenya. However, this year due to COVID-19 it has been different with their selection taking

place almost 100% digitally. According to the company this has an exciting new process. The breeder managed to introduce 11 different standard roses into their assortment and an additional 6 spray roses.

United Selections varieties have become very strong especially in the red colored roses. Madam Red and Finally are some of their red varieties they are proud of.

“Madam Red is a red variety for the African market and Finally for the South American market - they both stand out in productivity. Jumilia is one of our latest introductions for the Dutch market specifically. Even though it is a relative young variety, the final product is already being sold all over the world,” said Paul de Bruin, United Selections rose breeder.

Interplant Roses B.V. and Kolster B.V. strengthen their partnership in East Africa

Not wanting to waste any time, Kolster B.V. and Interplant Roses B.V. have already made a big step to strengthening their partnership in East Africa by adding more crops to their basket.

This bold and positive move during these testing times, shows just how committed both companies

are to the cut flower industry. By broadening its basket of products and taking advantage of its already extensive network, Interplant Roses hopes to create a winning formula for all Kolster's existing clients as well as future clients.

Interplant Roses is an international breeding company with a lot of experience in the breeding of cut flower roses, both single heads and spray (multi headed) roses. Its head office is located in the centre of The Netherlands, has its test facilities in Kenya and has a great network of worldwide agents and representatives.

Kolster BV, is renown for Magical plants and flowers and cut hydrangeas. They are specialist in

cutting products and are active in some 80 countries. olster BV has created a strong position worldwide in breeding programmes, cultivation expertise, innovation and branding.

Interplant Roses will now represent Kolster in both indoor and outdoor crops, which will include:

- Hydrangeas
- Scented roses
- Achillea
- Delphinium
- Ranunculus
- Eryngium
- Photinia
- Kniphofia
- Clematis
- Phlox



Florensis Kenya using technology to counter

GLOBAL CHALLENGES

Hoogendoorn Growth Management is developing horticultural automating solutions for over 50 years. With the rise of global awareness we see a change in growers' demands. Previously growers were focused on producing high quality products.

Nowadays the focus is on producing high quality products, while taking care of the environment by using natural resources in an efficient manner. The Hoogendoorn automation solutions can help growers in reaching these goals. One of these growers focused on both quality and sustainability is Florensis Kenya.

Growing together towards a better future

Florensis has been well aware of the global challenges. Twenty years ago, Florensis decided to start a production location in Naivasha, Kenya. With social and environmental responsibility in their DNA, Florensis Kenya can be defined as a real change maker. The organization cultivates propagation materials of young plants in order to add happiness to anyone's garden or home. In addition, the organization is an inspirer, a mentor and a supporter for the Kenyan employees and the community of Naivasha. Florensis Kenya is driven by the mindset that the production should be fully in harmony with people and nature.

Every aspect in Florensis' cultivation strategy contributes to a responsible production and consumption. By combining the information of the Hoogendoorn iSii process computer with plant-generated data of the sensors, the organization is able to optimize their growth climate and minimize the use of required natural resources. Moreover, Florensis takes urgent action to combat climate change by integrating renewable solar energy in their greenhouse.

Another important aspect to realize healthy crop is knowledge. Since Florensis is cultivating a broad diversity of plants, their employees are trained in many cultivation aspects. One of the important training elements is the recognition of pests and diseases in an early

stage. By analyzing the historical and current data of pests and diseases, the employees are enabled to anticipate the prospective threat. Other important coaching sessions are provided in the area of cultural differences. This training is provided in order to cope with challenges arising from the different cultural perceptions about growing strategies. It is all about growing together towards a better future.

To become more sustainable, Florensis' practical approach is focused on contributing to six selected Sustainable Development Goals: good health & well-being, quality education, gender equality, clean water & sanitation, responsible production & consumption and climate action. For example, the company provides access to clear drinking water for all employees and their family members via their reverse osmosis system. Moreover, wastewater is used to fill up tanks for fish farming. The catfishes are distributed among the employees. In this way, Florensis Kenya contributes to a happy living environment for all employees and their family and supports the community.

Florensis believes that technology should synchronize with nature. Subsequently a natural equilibrium is realized by stimulating the biodiversity around the greenhouse.



By planting banana and acacia trees, cultivating sugar cane and placing bee hives in poor soiled and deprived areas, the natural balance is restored. An added benefit is the production of banana's, sugar cane and honey for their employees. On top of that, animals such as giraffes, zebras and hippopotamus came back and formed a source of inspiration for the management team. The management team is consistently committed to deploying projects to achieve the indicated Sustainable Development Goals, ensuring healthy life and promoting wellbeing for all people in the communities around Florensis Kenya.

What to know more about what Hoogendoorn can do for you?

Together with partner Bosman van Zaal, Hoogendoorn has a wealth of horticultural experience in various African countries. We help you as a farmer to always be a step ahead and get the maximum out of your greenhouse or open field.

Bosman van Zaal supplies local service and support for growers and installs the systems at your greenhouse. They also provide maintenance service, crop-focused and user training, and technical support to customers. With Hoogendoorn and Bosman van Zaal as partners a long term investment and partnership is key.

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