

ISSN 2075-5015

Hortfresh™

June - July 2023

TM

 KES. 400/=

●●● JOURNAL
FOR LEADS IN HORTICULTURE

GALAXY FLOWERS, Quality Summer flowers embellishing bouquets



IFTEX 2023 back on track and special



*Specialty Fertilizers & Crop Care Products.
We are importers and distributors of specialty
fertilizers and crop care products from different
parts of the world.*

Some of our partners include:



DeltaChem is a producer of innovative fertilizer solutions, which enable growers to maximize yields and minimize inputs and with respect for the environment. From our production facilities in The Netherlands and Spain, we export our products globally. Our product range consists amongst others out of controlled release fertilizers, inhibitors, enhancers, water soluble salts and many more. With in-house laboratory and R&D facilities, DeltaChem can rapidly develop and introduce tailor-made solutions for each market, making us a flexible partner to our clients.



Specializes in development of production and distribution of Organo- mineral and ecological fertilizers and soil improvers with head office in Netherlands.

The Contact are as follows Tel: +31263523100 www.memon.nl

We are an open ended company willing to associate with best brand manufacturer of plant nutrition products



Unifarm Chemical is company for research, development and production of professional plant nutrition products for agriculture. Based in Antalya Turkey the company was established in 2010 by Altinta an experienced company in plant nutrition sector since 1988. They produce some of the best foliar feed, Bio-stimulants and soil conditioners. Their contacts are: +905 330 333 553. E mail:unifarm2unifarm chemical.com web: www.unifarmchemical.com



Livatty Africa Ltd

Specialty Fertilizer & Crop Care
P.O. Box 5688 - 00506 Nairobi, Kenya
Tel 0202042810.
Mobile: 0722522897
Info@livatty.com,
www.livatty.com



Engineered For Reliability & Quality



Our Vision

Our vision is to create a world where everyone has access to clean, safe, and reliable water from a reliable water pump. We've partnered with reputable pump manufacturers to give quality and reliable products at affordable prices. We'll continue to be the Name in the industry to provide long lasting pumps solutions thus creating a healthy strong bond relationship with our customers.

Why Choose Us?

Our water pumps are designed to be highly effective, efficient and durable. They are manufactured with superior quality materials and components which ensure maximum performance.

- ✔ Pumping Excellence - Our Commitment to Quality, Performance, and Service.
- ✔ Delivering Exceptional Quality, Service & Value - Our Promise to You!



GET IN TOUCH

sales@majitec.co.ke
www.majitec.co.ke

+254 792 794 099
+254 724 794 099

P.O. Box 27527 – 00100 Baba Dogo Road, Next to Dawa Ltd,
Prabhaki Industrial Park Godown No A4, Ruaraka Nairobi.

EDITOR

Joseph Karanja

WRITERS

Bob Koigi
Steven Mulanda

DESIGN & LAYOUT

TechERA Enterprises Ltd

CONTRIBUTORS

- Ruth Mwangi - Galaxy Flowers
- George Kariuki - Ziva Agriventures Ltd
- Santiago Larco Reyes - Marketing Arm
- Edwin Kiptarus - Bayer E A Ltd.
- Cynthia Cheshari - Win Win
- Gopal Goldhonp - Orchard Picks Ltd

MARKETING

Carol Mwaura



Published by



Post Bank Pension Towers,
Formerly Trishul Towers, Murang'a Rd
3rd floor Suite 17
P. O. Box 7105-00300
Nairobi, Kenya.
Cell: +254 723 308725

Email: info@hortfreshjournal.com
www.hortfreshjournal.com

Hortfresh Journal is a bi-monthly publication, circulated locally and abroad to players in the horticulture industry including suppliers of agricultural inputs and services, governmental and non-governmental organisations, among others.

The editor is keen to ensure that the contents of this magazine are accurate as possible. Views expressed by the advertorials are not necessarily those of the publisher.

© All rights reserved. Reproduction in whole or in part without prior written permission from the publisher is prohibited.

IN MY OPINION

Doing business Differently

Different times call for different measures and strategies. We are in an era where many businesses are facing a common problem of cash flow, unprecedented environmental degradation and inequality. This is calling for doing business unusual and not only looking at the profits but at environment and social wellbeing.

The desire to create products and services that satisfy the needs of society, while staying in harmony with nature should take precedence. This call for being aware of the negative environmental and social impacts related to the production and striving to mitigate them.

It implies, not only taking careful consideration of resource use but also investment in employees and communities within which companies operate. Dignifying the work employees do as well as empowering them.

Businesses should become much more embedded in the community by allowing locals to benefit, using clean energy, saving on energy and making people an asset to coexist together.

What determines our success is the strategies we take to do things differently in order to achieve unique solutions. It is time to design business processes to coexist with environmental and social systems.

Contents

05	Events	IFTEX 2023 back on track and special
08	Floriculture	Galaxy Flowers, Quality Summer flowers embellishing bouquets
16	Technology	Advancing technology for avocado production in Kenya
18	Fruits farming	BITTER MELON farming, changing Meru farmers fortunes
32	Organic	Evergrow Organic Fertilizer, Nurturing Crops and Boosting Yields
34	Empowerment	Engaging men to advance women's economic outcomes
38	Vegetable farming	Orchard Picks Ltd; Growing is their business and they're good at it
40	Vegetable farming	Tomato farming putting a smile on a young Kajiado County farmer
46	Seed Saving	Seed Savers Network; saving seeds for generational use



IFTEX 2022

IFTEX 2023 Back on Track and Special

IFTEX 2023 is set to be the largest edition since its inception in 2012, with over 165 companies participating in the exhibition. The number of growers showcasing their products has significantly increased especially among new smaller growers, aligning with one of the key objectives of the exhibition.

The event will commence on Tuesday, June 6th, welcoming numerous trade visitors, particularly international flower buyers seeking to fulfill their flower requirements for the upcoming year. Organizers are thrilled about the potential success of the second edition following the disruptions caused by the Covid-19 pandemic.

During the 2022 edition, producers, breeders and other suppliers were eager not to miss out on the opportunity to present themselves after 3 years break. Dick van Raamsdonk, spokesperson for IFTEX one of HPP Exhibitions, shared



IFTEX 2022



Dümmen Orange welcomes you at the International Flower Trade Expo

6 - 8 June IFTEX, booth B2.12
Visa Oshwal Community Centre
Ring Road Parklands
Nairobi (KE)

6 - 8 June Show House
Dümmen Orange location
Moi South Lake Road
20117 Naivasha, Kenya

Contact information

Peter Mwangi Area sales manager (East Africa Region)
+254 726 212 520

Maureen Luchemo Sales Account Manager
+254 720 550 560

Bart Engels General Manager
+254 759 069 896

Dümmen Orange Location

P.O. Box 479 - Moi South Lake Road
20117 Naivasha, Kenya
Tel +254 (0)50 51018 M. +254 715 982 132

CARNATION / CUT MUM / GERBERA
ROSE / LIMONIUM / PROPAGATION



Your bouquet at source specialist

his optimistic outlook for this year's event, stating, "Last year marked a comeback, and this year we are back on track."

IFTEX is a platform especially designed for the international cut flower industry where growers can meet buyers, direct from farm to shelf. According to the organizers, there are several new growers on board this year as well as brokers who export flowers from growers. For buyers this is a great opportunity to source Kenyan grown flowers from more growers.

During this year's event, to be specific on 7th June, an interactive session has been organized to take place at the Oshwal Centre main auditorium, where presentation and discussion on Unlocking Kenya's Potential in the Floriculture Industry will feature. Issues in regard to the sector's compelling sustainability journey; where it is now and how to work out collaboratively towards 2030 will be deliberated. Kenya Flower

Council (KFC), Floriculture Sustainability Initiative (FSI) and Women Win, will share their vision and welcome inputs on how to support Kenyan growers and the industry. The session will focus on issues such as; Certification, Foot printing, Living Wage and Gender Mainstreaming among others.

The exhibition is becoming a regional flower trade fair for not only for Kenyan flower growers, but also for growers from South Africa; Zimbabwe, Tanzania, Zambia, Uganda, Ethiopia and other African flower producing countries. Out of the exhibitors showcasing their products, over 60 are flower growers, promising another successful edition with lots of business.



IFTEX 2022

Continental Seeds is one of Africa's innovative seed company geared to offering top quality seeds to growers. Founded in 2012 in Kenya as a family business, we have progressed to become one of the fastest growing seeds companies in Africa.

Our partnership with leading international plant breeders, innovative research, a robust product development program and a keen understanding of local growing conditions, enable us provide growers with seeds of high quality and distinct added value. This brings enhanced profits and success to our growers and distribution partners.

Our range of vegetable seeds



We have both hybrid and open pollinated varieties

- Tomato
- Onion
- Cabbage
- Watermelon
- Sweet Pepper
- Chilli Pepper
- Broccoli
- Cauliflower
- Squash
- Cucumber
- Carrot
- Coriander
- Eggplant
- Pakchoi
- Okra
- Lettuce
- Spinach
- Collards
- Celery
- Parsely
- Radish
- Turnip
- Beetrot
- Leek

Mbegu bora huleta mazao bora



Product Development

Our wide range of vegetable seeds are carefully selected in local screening and field demo trails across Africa and corresponding breeding locations by our seeds suppliers.



We carefully source and select varieties that have unique characteristics such as tolerance to common pests and diseases, high germination vigour, short day maturity and higher yield with an aim of giving growers maximum profitability



Galaxy Flower's; Mr T.A Zipare (R) the Managing Director and Ruth Mwangi, Marketing Manager

Kenya is renowned for its roses but the range of summer flowers being grown are coming out as an asset to consider. Summer flowers are used to blend, embellish and combine bouquets making them to be on high demand. Kenya summer flowers have become popular in global markets due to their freshness and uniqueness. They have increasingly become popular among small-scale flower growers because they are easier and less expensive to manage, and they can also be grown in open fields.

Galaxy Flowers, Quality Summer flowers embellishing bouquets

Galaxy Flowers has been in the flower business for a decade and over the years they have been able to expand tremendously. One of their objectives is to grow quality flowers, in response to the Kenya Government's policy paper of 2002 on "Wealth and Employment Creation". Apart from creating wealth through foreign exchange earnings, the enterprise creates jobs and boost local economy and community development.

"Galaxy Flowers was established in September 2013. We are situated in a very good location, near Nyahururu which is along the Equator. The altitude is 2000 meters above sea level and the land is touching one of permanent river Ewaso Nyiro. The farm has a total of 27 hectares of land with very nice gentle slope of red soil. Due to the proximity to the Equator our flowers enjoy 12 hours of sunshine throughout the year guaranteeing our

customers high quality, thick stems, intense tones and long vase life. We have spread our production cycles to guarantee supplies throughout the year," said Ruth Mwangi the marketing manager

Currently they have 19 varieties of summer flowers in their assortment portfolio. Their assortment is trendy with assortments that include tinted flowers. "Some of the varieties we farm includes; *Gypsophilla Cosmic My White*, *Gypsophilla Excellence*, *Limonium Pina Colada*, *Limonium Safora Dark Blue*, *Limonium Dark Pink*, *Rainbow Gypso*, *Veronica*, *Veronica white*, *Veronica Blue*, *Veronica Pink*, among others.

Ever since we set up 10 years ago, one of our main driving forces which guides our philosophy and defines us is that we do not compromise on quality. Taking shortcuts is not part of



our culture because we are consumer led and take time to listen to what the customers want and respond to their requests. This philosophy has given us a competitive edge in the market,” said Ruth.

To ensure that the flowers are grown sustainably, the company has invested in various innovations and environmentally friendly practices. They have embraced biological, organic pests and diseases control methods. This protects workers the environment and ensures that the flowers meet as well as exceed global standards. The Farm is 100 percent organic, using liquid organic fertilizer popularly known as Jeevamruit.

“We are keen on embracing clean, green and sustainable energy sources as part of our commitment to reduction of carbon footprint. We have transitioned to solar energy, which has also seen us reduce energy costs by around 20 percent while allowing us to have consistent and uninterrupted power supply that reinforces our operations.” Ruth noted. Investment in these sustainable practices has seen the firm earn globally acclaimed accreditations; MPS.

The company first flowers were officially launched and commenced sales at the Dutch flower auction, Royal Flora Holland in the year 2014. Having started fully on auctions, the company has diversified to European

countries like United Kingdom, USA and Australia whilst also maintain their produce stake to direct markets in the Netherlands and Middle East mostly UAE and Saudi Arabia.

Well having said and done, it hasn’t been all rosy in the Kenya flower Industry, as is the case the company has been grappling with high freight charges and a lack of cargo space that have taken a toll on production and export numbers. “We keep imploring the government to support the Kenyan flower industry, especially on the freight challenges. Growers have demonstrated they are willing to do their best to produce quality flowers. But their steps are being hindered by the exorbitant freight charges that make the Kenyan flowers uncompetitive in the global market. For instance, inadequate space in the airline causes delays which makes our clients sometimes to cancel their orders and also roll over makes the quality of the flowers to worsen,”

Ruth further said.

“One of our biggest challenges ever faced was COVID 19. It negatively impacted our business in that we were not able to sell flowers thus we incurred losses and the company also ran into bad debts. We have cushioned ourselves by diversifying our markets, integrating both local and international market and reducing the prices just to try and push for the volume to avoid more wastage,” she noted

Galaxy Flowers maintain one vision to grow high quality, sustainable flowers that places the Kenya floriculture sector firmly on the global map. For their future, the company intends to increase productivity of their workers by capacity building through offering appropriate training while offering more employment opportunities to more people.



Summer flowers growing at Galaxy Flowers Kenya in Nyahururu



Workers at Galaxy flowers grading summer flowers



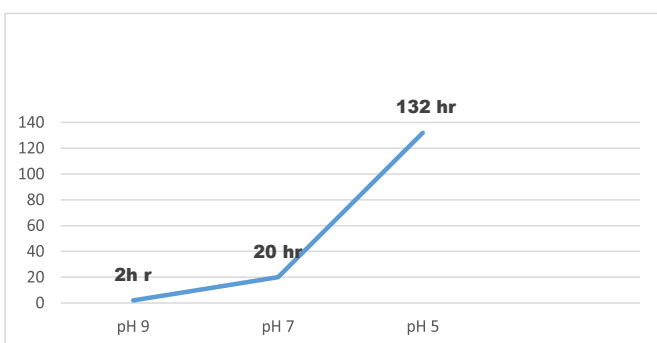
The Impact of Water Quality on Pesticide Performance



Water quality is one of the main factors affecting the effectiveness of pesticides applications. There are three major factors in the spray solution that affect the chemical stability and effectiveness of pesticides in the field:

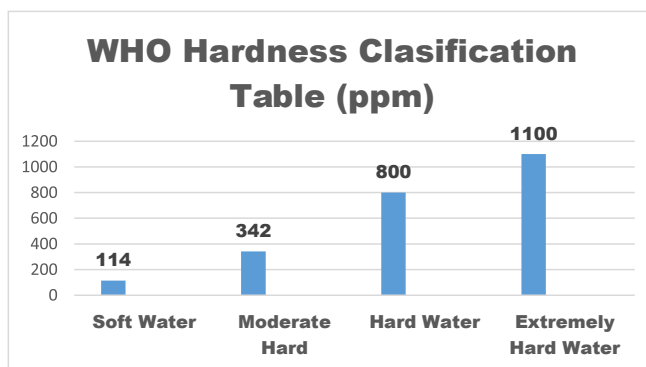
1. Alkaline Hydrolysis.

Spray water with high pH level causes Alkaline Hydrolysis. Under this environment pesticides undergo a chemical degradation reaction in the presence of alkaline water (water that has a pH value greater than 7) and reduces the effectiveness of the pesticide's active ingredients



2. Water Hardness:

Many pesticides trends to have an overall **negative charged (-)** after they are mixed with in spray water in the mixing tank. In a hard water environment, these **negatively charged (-)** pesticides can easily bind with minerals such as calcium (Ca⁺), magnesium (Mg⁺), iron (Fe⁺), aluminum (Al⁺), zinc (Zn⁺), etc., that are **positive charged** to form a **precipitate**. This reaction causes a chemical degradation and a reduction of the pesticide's effectiveness.





**MARKETING ARM
INTERNATIONAL, INC.**
Environmental Friendly Products
For Sustainable Agriculture

PH-PLUS



WATER HARDNESS AND pH REGULATOR



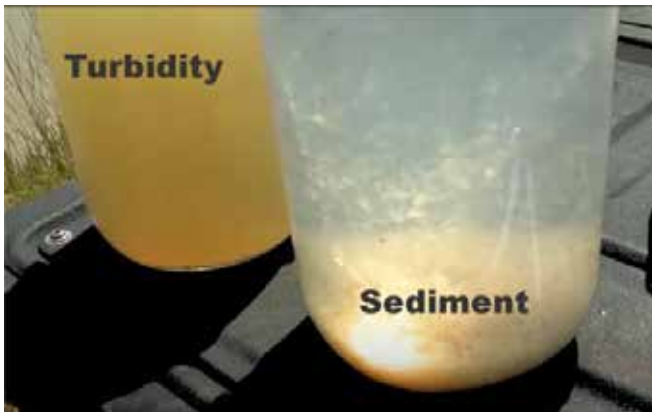
**Environmental Friendly Products
For Sustainable Agriculture**

3. Turbidity (Murky or muddy water):

Silt, Clay, and Organic Matter found in murky, or muddy can bind herbicide molecules and settle as sediment to the bottom of the tank. This particles settlement will bind physically the pesticide molecules and consequently inhibits the pesticides from functioning properly.

Turbidity (NTU) Table

Nephelometric Turbidity Units (mg/L)
(Montana Department of Agriculture)



4. Ideal Water quality for Pesticide application:

- pH 5.0 - 5.5
- Water Hardness less than 80 ppm
- Water Turbidity of 10 mg/L

Solution to Improve Water Quality for Pesticides application:

Marketing Arm International provides and recommends PH -PLUS as a tool to farmers to

improve water quality and significantly increase the effectiveness of pesticides (Fungicides, Insecticides, Herbicides, etc.)

Advantages of PH PLUS in water quality

- PH - PLUS needs to **BE ADDED FIRST** to the mixing tank before adding the pesticides and foliar fertilizers. Then, add the Liquid Formulation, followed by the Powder Formulations. Then, add Foliar Fertilizer last to the mixing tank.
- PH - PLUS is an **ACIDIFIER** that reduces the pH of the spray water for Pesticides, eliminating the effect of Alkaline Hydrolysis on pesticides applications.
- PH - PLUS is a **WATER SOFTENER** by encapsulation of minerals such as calcium (Ca+), magnesium (Mg+), iron (Fe+), aluminum (Al+), zinc (Zn+), etc., inhibiting the binding with the negatively charged (-) pesticides.
- PH - PLUS has the characteristic to **CHANGE COLOR** of the spray water to indicate when perfect water quality control has been achieved:
 - Yellow Colour:** Acid pH and hard water.
 - Whitish Colour: Neutral pH
 - Red or purple color :** Acid pH (> 5.5) and water softened (>100 ppm).
- PH- PLUS is a WETTING AGENT that reduces "surface tension" and distributes the drops to the maximum on the foliage and promotes cuticular penetration and consequently better absorption of pesticides.

To learn more about PH - PLUS you can visit our website: www.marketingarm.com or go to the following link (<https://marketingarm.com/products/water-softener/ph-plus/>)

You can contact us directly through ; customercare@marketingarm.com for questions or technical support.



CITY GENERAL STORES LIMITED

DEALERS IN : HARDWARE ,BUILDING MATERIAL,INDUSTRIAL SUPPLIES, AGRICULTURAL SUPPLIES
PROTECTIVE GEAR AND EQUIPMENTS, IRRIGATION AND DRIP IRRIGATION SYSTEMS.ETC
P.O. Box 188 - 01000 Thika – Kenya, Mobile: +254 (0) 727 900 555, 733 817 540 ,704 622000
Email: sales1@citygeneral.co.ke, citygeneral@africaonline.co.ke
Email: sales@citygeneral.co.ke, marketing@citygeneral.co.ke



Leading Suppliers of:

*Personal Protective Gear
Irrigation Pipes and Fittings
3M Protective Products
Hardware and Building Materials
Oils and Lubricants
Paints and Painting Materials
Stationery and Packaging, Adhesives
Power Tools and Hand Tools
Mul-T-Locks, Union, Viro Locking systems
Uniforms and Shoes
Timber and Wooden Poles
Water Tanks and Underground Tanks
Steam Pipes and Fittings
Electrical Lights and Switches
Cleansing Materials
Carton Strapping & Stitching Machines
Portable Bag closing Machines*



Advancing technology for avocado production in Kenya

BY BOB KOIG

As the horticulture industry continues to recognize avocado as a produce keen on increasing the country's foreign earnings, players are investing more resources and research in the produce even as it continues to excite local and export markets. Avocado remains the single highest exported fruit accounting for 80% of the total earnings. The global increase in demand for the fruit has been accelerated by international recognition of the multiple health benefits associated with it and thus making it an inclusion in most diets.

But avocado has also had its fair share of challenges from pests and diseases, effects of climate change and poor farming practices by smallholder farmers that has seen rising interceptions.

It is against this background that hundreds of industry players recently came together to place a pulse on the status of the industry. The Avocado conference dubbed 'Advances in Technology for Avocado Production in Kenya' was organized by The New Zealand Institute for Plant and Food Research Limited (PFR) in partnership with the New Zealand Ministry of Foreign Affairs and Trade (MFAT), Kenya Agricultural and Livestock Research Organisation (KALRO), Kenya Horticulture Crops Directorate (HCD), and Olivado EPZ Ltd.

In 2013, the New Zealand Ministry of Foreign Affairs and Trade, in partnership with The New Zealand Institute for Plant and Food Research Ltd and Olivado EPZ Ltd, initiated the

Kenya Avocado Industry Support Project (KAISP), aimed at developing and introducing new and improved technologies to support the growth of the avocado industry in Kenya. This workshop marks the end of this project, and as such, we would like to invite you all to join us to present key findings from our 10 years of operating research, implementation and extension on the ground in the Kenyan Central Highlands, and discuss the pathways to ensure a sustainable future for the industry.

The workshop highlighted the key outputs from the research done on Avocado as well as discussing the pathways to ensure a sustainable future for the industry.

Among the topics discussed at the workshop included Fruit quality: the importance of fruit dry matter as a measure of fruit maturity, quality and consumer preference, Fruit maturity: a novel, computer-based model for predicting optimum harvest maturity



Delegates attending Avocado conference at Kenya Agricultural and Livestock Research Organisation (KARLO)



Uphold™ 360 SC
Jemvelva™ active

INSECTICIDE

INSECT MANAGEMENT SOLUTION

Quick knockdown & residual control of Caterpillars on Roses, False Codling Moth (FCM) on Avocado and Tuta absoluta in Tomato.

Uphold™ 360 SC offers duo Mode of Action with both ovicidal and larvicidal effect.

Active Ingredient:

Jemvelva (Spinetoram) 60g a.i./L and
Methoxyfenozide 300g a.i./L

Application rate: 0.4L/Ha • **WHO Classification:** III
IRAC Group: 5 & 18

Corteva Agriscience™

Keystone Park, Block B, 3rd Floor, Riverside Drive
P.O. Box 53384 - 00200, Nairobi Kenya
Tel: + 254 709 142 000

For more information call: 0724 221 870 or 0723 771 666

dates in different localities across Kenya, Avocado water use and irrigation needs: A computer-based model defining water needs of trees of different ages throughout the avocado growing areas of Kenya. This is a vital tool for identifying locations and soil types across Kenya suitable for sustainable avocado production. Others included Sustainable avocado orchards: Orchard biodiversity, soil restoration, fertility maintenance, as factors in sustainable avocado production in Kenya and Meeting the research needs of the avocado industry in Kenya.

One key highlight of the workshop was the discussion on the Avocado disease called Phytophthora Root Rot which can progressively destroy avocado trees in an orchard resulting in economic losses. The symptoms include wilting, yellow leaves, and branch dieback. Experts say to prevent these farmers are advised to buy their seedlings from reputable and reliable nurseries that observe high levels of hygiene.

The rise of the avocado industry has to a great extent been necessitated by partnerships.

One such collaboration has been The Kenya Avocado Industry Support Project by The New Zealand Institute for Plant and Food Research Limited (PFR), New Zealand company, Olivado and small-scale avocado growers in Kenya. It was initiated with the aim of developing and introducing new and improved

technologies to support the growth of the avocado industry in Kenya.

New Zealand is a world leader in horticulture and global food production. A key aspect of New Zealand's increasing engagement with Kenya is sharing the expertise to promote sustainable economic development and support food security. Plant & Food Research has been working with Olivado operations in Kenya to strengthen the avocado industry. The combination of New Zealand horticulture expertise and a secure pathway to market provided by Olivado has been advancing the economic development of small holder farmers.

“ The workshop highlighted the key outputs from the research done on Avocado as well as discussing the pathways to ensure a sustainable future for the industry. ”

The goal of the project has been to more than double the average return to small holder avocado farmers by improving their yield, shifting to a new variety of avocado tree and improving post-harvest practices.

“By increasing both the productivity and the quality of production we're hoping to be able to make a big difference to the lives of the smallholders. The key to the long-term sustainable success of this project is going to be linking their growth to the success of Olivado's business which sells the oil in over 30 countries” says Plant & Food Research Business Development Manager Barbara Stowe.

Olivado provides a secure pathway to market for about 1,200 smallholder avocado farmers in the Central Highlands north of Nairobi. These smallholder farmers generally have farms of just 1 hectare, with on average just 24 trees. Additionally, about 45% of the smallholder farmers are women.

With Olivado's operations in Kenya, there is a visible improvement for farmers: new houses, wells, children going to school. The project will see these farmers moving from subsistence agriculture to being part of the cash economy, a real step forward in development.

“At one farm the additional income from the Olivado programme has allowed farmers to buy a cow, which they named 'Olivado'. In another example a farmer is buying a small number of bricks each year, with hopes of building a new home to replace his present mud house. It's a great project to be a part of” says Stowe.

Olivado has two production bases, a factory at Kerikeri in the Bay of Islands for New Zealand production and bottling and a production plant in Nairobi, Kenya. Their Kenyan facility purchases Fair Trade and Certified Organic avocados directly from independent, family-owned smallholder farms in the Central Highlands of Kenya.





FineTouch Africa

We make it Green

Dealers in supply and installation of irrigation equipment and related Systems design



Drip irrigation



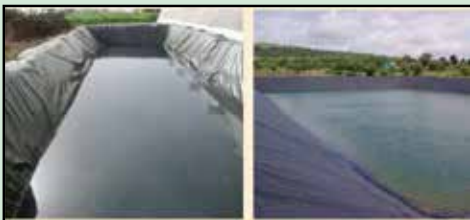
Green Houses



Sprinkler



Solar Pumps



Dam Liners



Shade Nets



Agri Power equipment



Pipes and Fittings



Planting Trays

FINE TOUCH AFRICA LTD

Tel: 07000 169 962 / 0724 615 066

Email: finetouch@finetouch.co.ke Website: finetouch.co.ke

Ongata Rongai | Nairobi | Mombasa | Nakuru | Kisumu | Eldoret | Bungoma | Bomet | Kapsabet



Bitter Melon also known as Karela

BITTER MELON farming, changing Meru farmers fortunes

For a long time, Meru County has been known as a haven for growing Miraa but in the recent past, bitter melon also referred to as *Karela* has gained track. It is in fact a fruit, belonging to the family of Cucurbitaceae veggies like cucumber and zucchini, which goes with the botanical name *Momordica charantia*. Bitter melons are darker green, spiky, and covered in textured warts. The crops is a vine which grows up to 4 meters tall and 3 meters in radius forming a nice canopy. They are propagated through grafting and direct sowing of seeds.

George Mbae started off farming at a tender age in Mitunguu Sub County engaging in Miraa farming but his attention was drawn to bitter Melon farming in 2010 when he got wind from his village mate who was growing the fruit and was earning more money thus how his bitter melon farming journey began. The story goes that the villager while on a trip in India noticed the fruit and later on bought seeds and set up his orchard in Meru. He later began grafting seedlings with lemon rootstock and neighbors began purchasing the seedlings.

According to Mbae, growing and grafting Karela is lucrative business. It's a profitable crop to grow in Meru County since it has a higher demand for both the seedlings and the fruits. "Grafted Karela seedlings also have a good demand in the market; a seedling sells at Ksh 200. The price of the fruit at farm gate is usually Ksh 100 per kilogram. It is a lucrative business because the farmer dictates the prices. Multinational companies usually visit us to buy the fruits and also locally we sell to middlemen," says Mbae.

The most interesting about the venture is they never discovered from the onset the benefits of growing Karela apart from the earnings they received. Most buyers who purchased the crop never told them the secret behind it until later on in the course. Bitter melon contains many nutrients that can be beneficial to your health. It's linked to lowering blood sugar, which some studies suggest means it can aid in diabetes treatment.

Bitter melon is considered a complementary or alternative medicine. Though, the use of bitter melon isn't approved by the Food and Drug Administration (FDA) for the treatment of diabetes or any other medical condition. Bitter melon is linked to lowering the body's blood sugar. This is because the bitter melon has properties that act like insulin, which helps bring glucose into the cells for energy. The consumption of bitter melon can help your cells use glucose and move it to your liver, muscles, and fat. The melon may also be able to help your body retain nutrients by blocking their conversion to glucose that ends up in your blood stream. Bitter melon isn't an approved treatment or medication for pre-diabetes or diabetes despite the evidence that it can manage blood sugar.

"I have never been in employment. Pixie farming gave me job security and economically empowered me to take care of my family needs and pay school fees for my children. I have also benefitted from training on new age farming which I hope to apply in my farm," said Erastus Mwitii one of the sons of George Mbae.

Most farmers delving in bitter melon farming are either diversifying with bananas while others are running away from the frustrations meted on them by Miraa farming. Miraa in the area is high yielding though in the recent past the market has been shrunk with the banning of the crop in United Kingdom and the closing of the Kenya-Somalia border resulting in market lose and thus bitter melon has been godsend.

"The good thing with bitter melon is an all round crop meaning we can be able to harvest throughout the year. A well tended bitter melon plant starts flowering at the age of 8 months.

The production of good quality bitter melon fit for the market is dependent on various factors. First George Mbae has sort the assistance of an agronomist who guides on chemical application and control of pests and diseases. For instance, Meru being relatively cool area, insurgence of tephritid fruit flies is high and they can wipe out the entire production in a single day when not controlled. Secondly, the plant requires water throughout and having a reliable source of water for farming the crop is ideal.

The challenge he has encountered in farming bitter melon is high cost of fertilizers and chemicals. In addition high costs of fuel are draining his pockets because here relies on water pumps to draw water from a borehole to irrigate the plants. "My main aim was to master the art of growing this fruits and i have lived to that. My next target in the coming years will be to start selling the fruits myself in the markets and if possible do value addition," he concluded.



AFRODRIP LIMITED

✉ sales@afrodrip.co.ke

Afrodrip is a leading irrigation company specializing in the manufacturing of high-quality HDPE pipes, shade nets, and driplines. With a commitment to sustainable agriculture and efficient water management, Afrodrip offers innovative irrigation solutions that cater to the needs of farmers, landscapers, and agricultural industries. Our products are designed to enhance crop yields, conserve water resources, and contribute to the overall development of the agricultural sector.



HDPE PIPES: We specialize in manufacturing high-density polyethylene (HDPE) pipes that are durable, lightweight, and resistant to corrosion. Our pipes are designed to withstand varying weather conditions, ensuring long-lasting performance and minimal maintenance requirements



SHADE NETS Nets: Afrodrip offers a wide range of shade nets that provide essential protection for crops against excessive sunlight, wind, and pests. Our shade nets are made from high-quality materials, offering excellent UV resistance and strength. They are available in various sizes and shade percentages, catering to the specific requirements of different crops and cultivation practices.



DRIPLINES: Our state-of-the-art driplines provide precise and efficient water delivery directly to the plant root zone. With advanced drip irrigation technology, our driplines offer uniform water distribution, minimizing water wastage and maximizing crop productivity. We offer a variety of dripline options to suit different soil types, crop layouts, and irrigation needs.

Afrodrip is a trusted name in the irrigation industry, known for manufacturing high-quality HDPE pipes, shade nets, and driplines. With a commitment to sustainability, customer satisfaction, and innovative irrigation solutions, we strive to make a positive impact on agriculture and contribute to a more sustainable future. Choose Afrodrip for reliable, efficient, and environmentally friendly irrigation systems that help you achieve optimal crop yields and conserve water resources.

NHFAIR, 20th anniversary and still glowing



Naivasha Horticultural Fair is on its 20th exhibition and has consistently grown over the years, attracting large audience from across the continents. This year the fair is set to be held on 15th - 16th, September 2023.

Richard McGonnell, the Chairman of the fair in one of the interview recalls the struggles they have had to overcome to put up the NHFair to its acclaimed status. “The first show had about 50 exhibitions, it has grown in popularity due to the fact that it is cost effective compared to other shows. It has been pivotal in giving the horticulture industry good exposure after years of receiving bad press coverage. There is a lot of expansion of the industry in Kenya and more developments, for example there is a lot of solar power investment in the industry which will shape the sector in a big way moving forward,” he stated

One of the unique attributes of NHFair is that the proceeds goes to local charities. They have immensely contributed to building a secondary school from the collections received. The proceeds have helped in face lifting two health facilities, in maternal care, toilets and water tanks thus benefitting the local community. The Fair also runs a rescue shelter for abused children, which was voted the best community project in East Africa.

According to Clement Tulezi the CEO of Kenya Flower Council, this year for flower industry looks promising. “We’ve seen that the cost of fertilizers and packaging material has gone down marginally. On top of that, due to the high energy prices in Europe, we’ve seen that the volumes from European growers decrease a bit, in turn increasing the demand for Kenyan products and we are slowly becoming a source of many other

kinds of flowers than roses. There is high hope when global inflation stabilizes, demand will go up. The new government seems to be more receptive to the sector and seems to be willing to support it. After all, the flower industry is a huge sector for the Kenyan economy with huge employment for the Kenyan population,” Tulezi said.

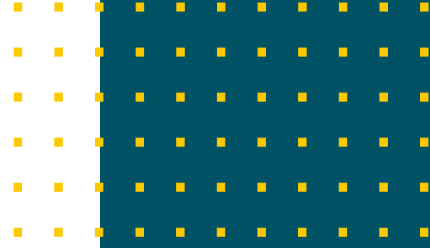
NHFair comes at a time when the industry continues to experience unique developments such as surge in sea freight for Kenyan perishables which is a revolutionary idea and quite timely. Most flower farms have embraced diversification to herbs, avocados and vegetables to increase their revenue streams, to remain afloat. However, there is mixed bag of fortunes being experienced such as the weakening of Kenyan shilling to major currencies in the world and still Russia-Ukraine conflict, all which have taken a toll on Kenyan exports.





**NAIVASHA
HORTICULTURAL
FAIR**

Conference | Exhibition | Buyer-Seller Meet



BOOK NOW!




YEARS OF EXHIBITION EXCELLENCE



15th & 16th SEPT, 2023



NAIVASHA SPORTS CLUB

+254 726 629 666
+254 721 118 659
 nhfair@naivashahortifair.com
 www.naivashahortifair.com



Kenya's new strategy to improve quality of fresh produce exports

As the Kenyan horticulture industry continues to face growing number of interceptions due to the harvest of immature crops, hygiene, poor storage, transportation challenges and pest controls that have affected its access to the export markets, stakeholders in the industry have decided to do something to tame these interceptions and increase the country's competitiveness in the global export market. The National Horticulture Taskforce (NHT) recently unveiled Good Agricultural Practice Guides for avocados, beans and peas that require exporters to comply with standards spelt out by the destination markets to avoid the bans.



The NHT is a multi-stakeholder forum with representation of about 20 organizations from both public and private sector in the horticulture sub sector that promotes private-public sector dialogue.

The forum also has the goal to ensure Kenya's horticultural produce complies with market requirements and sustains its reputation as a leading grower and exporter of horticultural produce.

The industry employs around 6.5 million people and in 2022, Kenya earned Sh146 billion from horticulture exports, with flowers contributing Sh103 billion, vegetables Sh23 billion and fruits Sh20 billion.

The two guides were produced together with partners including the NExt Kenya Programme, European Union, Kenya Flower Council and the Committee Linking Entrepreneurship Agriculture Development (COLEAD).

They outline the procedures to be adopted by value chain actors in the

avocado, beans and peas in pods sector – ensuring compliance with both market and SPS requirements at the regional, national and international level.

NHT Chairman, Clement Tulezi said that the Good Agricultural Practice Guides have come at a critical moment in the horticultural sector of Kenya which is currently facing major bottlenecks that need to be addressed to enable it to competitively thrive in the marketplace.

“The Good Agricultural Practice Guides have been developed by the stakeholders to address the challenges relating to the commercial quality and the regulatory requirements for beans, peas and avocado,” he said.

These challenges, he added, include compliance with SPS requirements such as the presence of harmful organisms and maximum residue limits for pesticides, use of quality



Packed Hass avocados ready for export

QUALITY SEEDLING TRAYS & PROPAGATION POTS



160 HOLE SEED TRAY



28 HOLE SEED TRAY (SMALL)



66 HOLE SEED TRAY



230 HOLE SEED TRAY



204 HOLE SEED TRAY



28 HOLE SEED TRAY (BIG)



288 HOLE SEED TRAY



91 HOLE SEED TRAY



286 HOLE SEED TRAY



PROPAGATION POT TRAY



7x7MM
PROPOGATION POT



82MM DIA BLACK POT
HEIGHT: 74MM



82MM DIA BLACK POT
HEIGHT: 114MM



105MM DIA BLACK POT
HEIGHT: 76 MM



120MM DIA BLACK POT
HEIGHT: 88MM



120MM DIA BLACK POT
HEIGHT: 110MM



120MM DIA BLACK POT
HEIGHT: 133MM



PET WATER BOTTLES



ASSORTED HOUSEHOLD ITEMS



RE-USEABLE WATER BOTTLES



ASSORTED DAIRY BOTTLES



PRINTED ICECREAM CUPS



ASSORTED PLATES AND BOWLS



ASSORTED CUPS



PRINTED DAIRY CUPS



MEAT AND EGG TRAYS



PUNNETS



BISCUITS AND CAKE TRAYS



PROPAGATION TRAYS

and true to type planting materials and adoption of good hygiene practices.

Mr Tulezi added, “Some farmers have been harvesting immature avocados which has led to flagging of the avocado exports to the niche markets. The good practice guides contain strategies on addressing these challenges.”

At the launch, Harsama Kello, the Principal Secretary, State Department for Crop Development, said horticulture is the fastest growing sub-sector in agriculture and has been on a steady rise in terms of production volumes and revenue for the last 10 years.

He added that the private sector plays a very big role in the industry of exporting avocado, beans and peas in pods and other horticulture products with more than 150,000 small scale farmers participating in value chains for the export market.

He said the Ministry will continue creating an enabling environment for the sub sector to thrive and ensure that the country realizes the desired agriculture transformation.

Dr Oronje said, “Pests and diseases directly impact the fresh fruits and vegetables sector and are known to migrate and move across borders, adversely affecting crop production.

“Ensuring that countries have good SPS measures in place means that a critical element of the food value chain can be strengthened not only to mitigate crop pests and diseases early on but also, crucially, at the point of export and import.

“The Good Agricultural Practice Guides for avocado, beans and

peas in pods are valuable assets for Kenya’s agricultural sector to have to help increase the productivity of its smallholder farmers but also their livelihoods and regional, national and international food security.”

Over the years, the Kenyan industry has recognized the need to comply with the numerous regulations on standards set up by destination markets and has embraced these requirements which have now become a “license to trade”. Working with the private sector, the Kenya Plant Health Inspectorate Service (KEPHIS) has worked hard to comply with EU regulations in terms of inspections and achieved status under EU regulation 1148 as an “approved nation” which ensured that Kenyan produce would be fast tracked on arrival in the European Market. This is a significant competitiveness advantage for Kenyan exporters.

To stem interceptions, Kenya has previously invested in standards that guide production and export of fresh produce.

The Kenya Standard 1758: 2016 (KS 1758) is a code of practice for Kenya’s horticulture industry, outlining the sanitary and safety criteria for the production, handling, and sale of flowers, ornamentals, fruits, vegetables, herbs, and spices. It is divided into two parts with part one covering floriculture, and part two covering fruits and vegetables.

The horticulture industry players in Kenya, in recognizing the importance of the sub-sector, and the challenges faced by the sub-sector, developed

a code of practice to regulate the production of horticultural produce. This aims to guarantee the supply of high-quality, healthy, and safe produce for both the domestic and international markets.

This move gave birth to KS 1758. The Standard is based on four major pillars namely: food safety, good agricultural practice, worker welfare, and care for the environment.

This Standard is administered by the Agriculture and Food Authority (AFA- Horticultural Crops Directorate – HCD) and it is domiciled at the Kenya Bureau of Standards (KEBS), with different industry stakeholders tasked with the duty of creating awareness of the standard.

At the same time, Government intervention in the Kenyan horticulture sector has mainly facilitating sectoral growth through infrastructure development, incentives and support services and letting the private sector steer the industry. The result has been unprecedented growth in the sector which has been the envy of many competitors and indeed the model has been utilized as a template for many emerging economies. Scaling up the capacity of the cargo terminal at the airport as well as adequate and efficient cold storage systems on site have also contributed significantly to efficiency in export horticulture. Availability of cold storage depots for hire near production zones was facilitated by HCD through construction of cold stores in various regions bringing chill chain services closer to the produce source.



We grow through ...
Partnerships



CHORDATA 10.2EC

Abamectin 20g/l + Pyridaben 100g/l

Highly effective Acaricide/Insecticide for use
in vegetables and ornamentals

PHI: 7 days for vegetable **REI:** 12 hours
Re-application period: after 7-10 days
Rates: 10ml/20lite or 375ml/Ha



Benefits

- Has a rapid knockdown and long residual activity giving better crop yield and quality.
- Highly effective at low application rate therefore less load to the environment.
- Pyridaben is active against all developing stages especially the larval and nymph stages.

TARGET PESTS:

Spidermites, whiteflies,
leafminer (*Tuta absoluta*)



You need Agrochemicals ...
Think



ORBIT AGRO CHEMICAL INDUSTRIES LTD.

P. O. Box: 48870 - 00100 Nairobi, Kenya.

Tel: (020) 2338200/1

Agro Customer care line: +254 752 368 468

E-mail: orbit@orbitchem.com, Web: www.orbitchem.com

CHRYSA SERVICES

by Chrysal Africa

**AIR FREIGHT
SERVICE**

**SEA FREIGHT
SERVICE**

**TECHNICAL
CONSULTING**



Products
four ingredients



Service
product preparation, training & monitoring



Equipment
dipping stands, buckets, PPE



Products
four ingredients, anti-ethylene treatment, packing liner



Service
product preparation, training & monitoring, quality checks, weekly auditing of sea freight process

NEW!



Dashboard
online access to all open and passed sea freight orders, related quality reports, analytics and notifications



Equipment
dipping stands, buckets, PPE, temperature, pH and EC meters



Long storage service
more flexibility with volumes and react to market conditions



Chain support
building sustainable partnerships between growers, shippers and buyers



Data reporting
parameters, quality improvements



Data gathering
gaining insights from trials and experiences



Service
helping to improve process & overall quality

NEW!



Controlled atmosphere simulation
trials on different CA settings to improve Sea Freight quality



Vase life testing
modern vase life test facility for CA or post-harvest treatment trials

- Keeps your roses Botrytis free
- Enhances colours
- Ensures uniform opening
- Prolongs vase life
- Enables for Long Storage

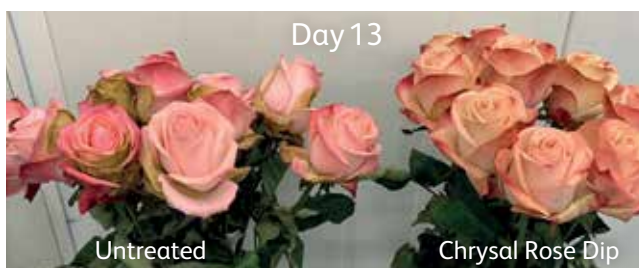


Better quality flowers, increased profit

Elevate your supply chain with Chrysal Services. Introducing two ground-breaking additions that will optimise your operations, making long-storage and sea freight integral to your process. Discover below the additional reasons why Chrysal Services provides you with the confidence to consider us as your perfect partner:

Chrysal Africa testing facility

Chrysal Africa is proud to introduce a new state-of-the-art testing facility in Nairobi. This harbours a large and modern vase life room and is also equipped with four controlled atmosphere chambers. This enables testing and optimising of different settings of oxygen and CO2 during long-storage and sea freight for a range of cut flowers. Facilitating trials with pre-defined settings, outstanding data collection and equal reporting on vase life tests.



Data platform: Blue Box

With the launch of Blue Box, Chrysal Services releases its data platform. Integrating not only all processes but foremost allowing customers to track real time data and developments regarding sea freight of cut flowers.

Customers will be able to track quality data themselves, real-time and set personalised notifications for any parameter deemed necessary. It allows tracking and viewing the history of sea freight orders.

Together with efficiency data and analyses, this gives valuable insights to help farms and customers improving the sea freight business.

Please contact our Technical Consultants
to find out how we can best support you: info@chrysal.co.ke

CHRYSA
L

Kenya's green plan to move 50 per cent of horticultural exports from air to sea-freight

BY BOB KOIGI

As Kenya intensifies its resolve to shift to the green and sustainable transportation of its horticultural exports it is partnering with Netherlands, Denmark and the European Union (EU). The partners have kicked off plans that will enable Kenya to not only increase its share, but also to shift to exporting half of its horticulture produce from air to sea freight in the next 10 years. This will reduce both the carbon footprint and the cost of exports. Several larger companies have already started to use sea freight for the export of flowers, vegetables and fruits but the sector is now aiming for a transformative and larger shift.

The kick off meeting at the Port of Mombasa marked the official start of engagements to map out pathways towards transitioning to moving more horticultural exports by sea. It was attended by Kenya's Cabinet Secretary for Mining, Blue Economy and Maritime Affairs Hon. Salim Mvurya, representatives from the Ministry of Roads and Transport, Ambassadors from European Union Member States in Kenya and TMA Country Director Mr Ahmed Farah and Deputy CEO Ms Allen Sophia Asiiimwe.

Those attending the meeting agreed that the shift from air to sea freight will allay growing concerns about air freight's large carbon footprint. The push for sustainable transportation comes not just from the EU, which is one of Kenya's major export destinations, but also other major global actors and industry players. Consumers especially in Europe, are on the frontline of this push for a radical decarbonisation of value chains that deliver fresh produce to their supermarket shelves and dining tables.

"The transition from air freight to sea freight will have to go hand in hand with the private sector. It is important to create export volumes, optimize systems and foster innovations in port development. Therefore, I am very happy to have attended the first public private working group meeting to facilitate the shift from air freight to sea freight," said the Ambassador for the Kingdom of the Netherlands to Kenya, Mr. Maarten Brouwer. The Netherlands also announced a trade



Kenya's Cabinet Secretary for Mining, Blue Economy and Maritime Affairs Hon. Salim Mvurya, representatives from the Ministry of Roads and Transport, Ambassadors from European Union Member States in Kenya and TMA Country Director Mr Ahmed Farah and Deputy CEO Ms Allen Sophia Asiiimwe at the kick off meeting to move Kenya's horticulture exports from air to sea transport at the Port of Mombasa.

mission to Mombasa and its Port in September 2023.

In his remarks the Denmark's Ambassador to Kenya, Mr. Ole Thonke thanked the Netherlands and EU Ambassadors and the representatives of the Government of Kenya for taking the lead in providing support to Kenya's green transformation of its export of horticultural product.

"It will be good both for Kenya and for importing countries like Denmark. We look very much forward to active participation first in the mapping of the opportunities, engaging the private sector in Kenya as well as in Denmark and later to contributing to the implementation of the transformation," said the Ambassador.

Speaking on behalf of the European Union, Ambassador Henriette Geiger said, "The sector is ripe for an urgent and radical transition from air to sea freight, more than ever as a step in the right direction in the clamour for climate change action. Our support is directly related to the EU Green Deal which aims, among other things, to make the economy and trade more sustainable and part of the EU Global Gateway. A more sustainable export of Kenya's horticulture goods is essential to ensure the growth of the sector in the future and all jobs and livelihoods that depend on it."

The support from the EU is part of the Business Environment and Export Enhancement Programme (BEEP), a five year Ksh 3.8 billion programme implemented by TradeMark Africa. The programme's overall goal is to enhance the competitiveness and raise the share of exports of Kenyan avocados, mangoes, and vegetables to Europe and other international markets. Part of the implementation initiatives will focus on resolving production, storage, logistics, value addition challenges that the horticultural sector faces. Other planned interventions include improving efficiency

and environmental sustainability of transport infrastructure to reduce trade costs and time, modernising and harmonising trade processes and procedures, improving access to quality standards and phyto-sanitary measures, streamlining trade agreements, and supporting the implementation of the necessary business reforms.

TradeMark Africa Deputy CEO, Ms Allen Sophia Asiiimwe, emphasised the organisation's commitment to convene public and private sector players to implement transformative programmes: "Sea freight is viable and a win-win option for all as Kenya gears to increase its volume of exports by 50% by year 2030. It is a more sustainable alternative, less expensive and has an enormous carrying capacity. As TradeMark Africa, we are working closely with our development partners and private sector players to establish digital corridors to enhance market access, increase transparency and traceability of Kenya's horticultural produce in the destination markets," she said.

Horticulture is one of the leading export earners for Kenya and generated Ksh 152.3 billion in earnings in 2022 compared to Ksh 165.6 billion in 2021, according to the Kenya National Bureau of Statistics. The decline in the horticultural exports was partly attributed to high inflation in the European Union, the primary destination for cut flowers, fruits, and vegetables.

Historically, air freight has been regarded as a faster and more reliable alternative in the shipment of goods. However, it is more expensive, detrimental to the environment and transports much less in volumes and value compared to sea freight. Studies show that air freight constitutes about 2.5% of global carbon emissions, despite ferrying just 1% of total global cargo. In contrast, sea freight produces about 2.9% of carbon emissions and accounts for over 80% of global trade by volume and 70% by value. This makes it a much more sustainable and environmentally friendly alternative in the race for decarbonisation.

ACHIEVE BETTER PERFORMANCE WITH HYBRID CARROTS FROM VILMORIN

SOPRANO F1



- Very good yield & marketable yield
- Good resistance to diseases like powdery mildew and Alternaria
- Good quality carrot: no greening, smaller core hence, better buttons
- Bigger roots
- Early vigor

SIROCO F1



Get better products with less quantity of seeds!

Our seeds are distributed by Starke Ayres Kenya



Starke Ayres Kenya
Mombasa Road, near Rapid Kate
T. +254 0700 456248
Nairobi, Kenya

George Miruka
george.miruka@vilmorinmikado.com
T. +254 7211 38786

Musa Owako
musa.owako@starkeayres.com
T. +254 721 258150



SEED GENERATION

vilmorin.com

MANAGING CATERPILLARS IN ORNAMENTALS: KNOW WHO THE ENEMY IS

• IDENTIFICATION- INSECT LIFE CYCLE • DAMAGE-FEEDING BEHAVIOUR • MONITORING-EARLY • CULTURAL CONTROL • CHEMICAL CONTROL

BY EDWIN KIPTARUS
BAYER E A LTD.

Caterpillar species cause huge damages to flower growers both directly and indirectly. They cause direct damages by rendering exportable stems to lose the desired quality hence go to waste, but furthermore increasing the cost of pest control to the growers.

Indirect losses result even after the crop is prepared and ready for export when it is intercepted resulting in loss of revenue and brand reputation. The far-reaching damages have prompted us to share few highlights on proper identification of the key caterpillar species with emphasis on False codling moth (FCM), in pursuit to keep the grower informed so as to take proactive action before it is too late.

IDENTIFICATION

In Kenya and in the East African region, many lepidoptera species have been identified to be of economic importance in flower production, but top of the list are: spodoptera, helicoverpa and thaumatotibia (FCM). Most pest caterpillars are immature-larvae stages of moths, or a few butterfly species.

Moths and butterflies have four stages in their lifecycle. Some species have only one or a small number of generations per year and may only be active during warmer months.

Eggs are laid either singly or in an egg

batch that may have 50 to several hundred eggs, depending on the species. Egg batches are often covered in scales and are therefore the same colour as the adult moth that laid them, generally brown, grey, or whitish.

Whether laid singly or in a batch, moth and butterfly eggs are generally spherical to ovoid or may be somewhat flattened or cylindrical. For most species, eggs hatch within a few days to a week, depending on the species and environmental conditions.

Caterpillars hatching from eggs are very small and often feed on their eggshell for their first meal. Caterpillars of moths often have 5 instars (stages), molting between each instar and increasing in size.

IMPORTANT NOTE

If caterpillars are a regular and damaging pest it may be worthwhile having them identified to gain information on:

- How many generations do they have per year and over what seasons are they active?
- Where do adults lay eggs?
- Where are caterpillars during the day/night?
- Where do they pupate?
- What other host plant species do they feed on?
- How far do adults fly? Do they migrate and what season/s does it occur?
- Do they overwinter in your region

and, if so, where do they do so (e.g. in the soil as pupae, on branches as eggs, etc.?)

FALSE CODLING MOTH

(*Thaumatotibia leucotreta*)
False Codling Moth (FCM), (*Thaumatotibia leucotreta*) belongs to the order: Lepidoptera (Lepi = scale, ptera = wing). The Order comprises a big group of insects with more than 180 000 spp. comprising of all moths and butterflies. It belongs to the Family: Tortricidae (leafrollers).

FCM is one of the most destructive pests, endemic to sub-Saharan Africa and is thus classified as a phytosanitary pest. The larvae feed on a wide range of crops including cotton, citrus, macadamias. It is considered as a poor invasive due to limited success in establishing outside Africa. The insect can't survive at temperatures below 1°C. This will result in the death of all individuals. One can expect up to five generations per season (warm humid climatic conditions)

FCM Life Cycle

Eggs

Eggs are laid singly or sometimes in twos or threes together. An adult can lay between 100-800 over time. The eggs are translucent, flattened, oval, with a diameter of 0.9 mm, and almost invisible with a naked eye.

Larvae

After hatching, the larvae eat through the skin into the plant part (fruit or flower) and starts the larval stage. During 1st-3rd instar when the caterpillar is young, it is creamy-white with a brown to black head capsule.

The full-grown larva is 15-20 mm long, bright red or pink in colour with light maroon head capsule.

Pupa

The pupa has a cream-yellow colour earlier to dark brown when mature. Both male and female have serrated posterior with a tough silken cocoon and live amongst debris or in the upper layer of soil.

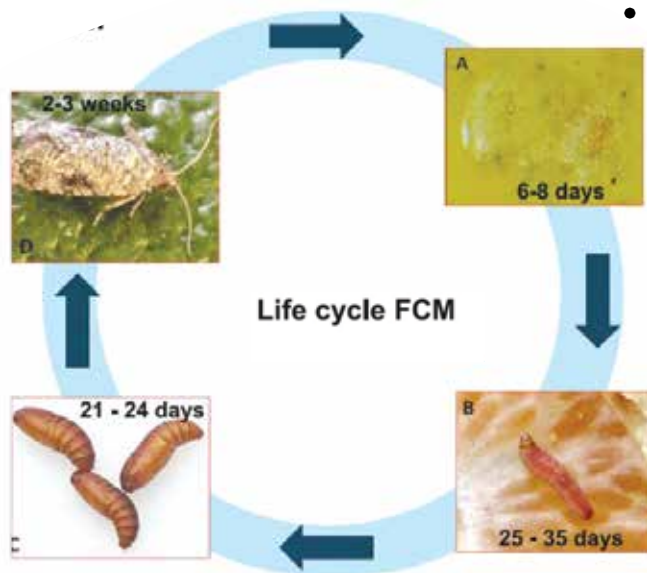
Adult

Male is slightly smaller with wingspan 15-16 mm, female 19-20 mm. In both sexes, the forewing pattern consists of a mixture of grey, brown, black, and orange-brown markings. They fly only at night and spend the date resting in shades. Male hind legs have a tuft of long white and black hairs. When disturbed can fly up to 1500m.

DAMAGES

The larvae mines into the flower, cut stem or into galls covering the hole with dark frass exudates. A small hole on the flower bud or lump of frass on the galls is a clear indication that the pest is present.

Opened flowers expose the larvae feeding inside the flower bud or flower petals as shown below:



grooves are more difficult to use.

- Specific lures or pheromone traps can monitor the activity of specific moths. Presence of the target organism in the trap indicates that they are likely to be present in the crop. This assists in understanding pest pressure.
- Sticky Traps- Use traps to monitor presence of the insect pests. Either use sticky colored traps or light traps depending on behavior of the adult pest

b) Cultural Practice

- Check incoming stock, new seedlings, and other new planting material to ensure it is free of all pests

Keep plants apart from the rest of your stock for a period, monitoring plants for all pests and diseases

- Prune out heavily damaged leaves or stems if necessary, this is particularly important for leaf mining and woodboring species
- Remove and destroy heavily infested, unsaleable stock. Leaving unbagged, infested plants or cuttings in the bin encourages pests to reinfest the property
- Screens placed over greenhouse vents and closing doors. In this case, extra care must be taken to ensure that pests do not

continuously complete their lifecycle in the structure

- If infestations persist for long periods in a particular greenhouse, grow plants that are not susceptible for a season to break the life cycle
- Practice good crop hygiene to avoid contamination between greenhouses or production sites. Remove crop organic matter that may have eggs
- Choose correct insecticides with no harm to parasitoids and predators

c) Chemical control

- There are many pesticides that can be used to manage caterpillars in flower farms.
- Most of them are contact products that do not move into the plant.
- Many contact products also are active when caterpillars ingest the product that is present on the leaf.
- Translaminar products move from the upper to the lower leaf surface (or vice versa) but not between leaves. Belt from Bayer is one such product.
- For caterpillars present on leaves, contact products can be sufficient.
- However, translaminar, or systemic products will probably be required for species that roll leaves, feed within stems or leaf miners

d) Biological control

Several biological agents are available for management of FCM. Grower can choose release beneficials or use attract and kill baits. Mating disruptors also work well if well located in the farm. In the recent past, biological insecticides have been developed to help manage this dreaded insect. Examples include *Bacillus thuringiensis*, *Beauveria bossiana* among others.

*Acknowledgment
Pictures & citation from KEPHIS
Photos: courtesy of Koppert*

MANAGING CATERPILLARS

a) Monitoring: Develop a monitoring plan

- Visual inspection: Inspect a small percentage of each plant type by hand.
- Preferentially examine leaves that have holes or a window effect or that have unusual symptoms; use a hand lens where relevant.
- Plant beating: Gently but firmly hit the foliage against a beating tray. The beating tray should be a single colour; white or black is preferable as this will make moving organisms more visible. It should also be flat; plastic plates with small bumps or

Evergrow Organic Fertilizer: Nurturing Crops and Boosting Yields



As horticultural farmers, you understand the importance of producing high-quality crops to meet the demands of both local and international markets. That's why we are thrilled to introduce Evergrow Organic Fertilizer and its exceptional variant, Evergrow Gold. These certified organic fertilizers have been specially developed to address the unique needs of local farmers and exporters who need a pathway to tap into higher-value international markets. With Evergrow, you can enhance your soil fertility, increase your crop yields, and achieve sustainable success in your horticultural endeavors. With Evergrow Gold, you can enhance your soil health, increase your farm's productivity, and unlock new opportunities for growth and success.

Quality and Sustainability

Farm Star, the trusted provider of agricultural inputs, brings you Evergrow Organic Fertilizer and Evergrow Gold, products dedicated to improving soil health by adding vital organic matter. Crafted from 100% organic materials, Evergrow is a nutrient-rich, fully decomposed fertilizer that is both sustainable and eco-friendly. We believe in supporting farmers and helping them

achieve higher productivity levels, not just in Kenya but beyond.

Evergrow Gold is a certified product designed specifically for the export market, ensuring that exporters can access certified organic products for their farms. Certified by both the Kenya Bureau of Standards (KEBS) and EcoCert, Evergrow Gold adheres to the regulations and standards that apply to organic agricultural products. This dual certification provides exporters using Evergrow Gold with a competitive advantage, as it allows them to tap into higher-value international markets where organic certification is a prerequisite.

Versatile Application

One of the remarkable features of Evergrow Organic Fertilizer and Evergrow Gold is its versatility. Designed for use on any crop, Evergrow and Evergrow Gold are particularly recommended for horticultural crops such as tomatoes, capsicum, onions, French beans, and flowers. They also prove beneficial for high-value seasonal crops like coffee, tea, rice, and wheat. Whatever you cultivate, Evergrow is here to provide the necessary support for your crop nutrition and soil fertility needs.

BENEFITS TO FARMERS

Increased Yield

By incorporating Evergrow into your regular production management program, you can experience a significant increase in yield. The nutrients present in Evergrow amend the soil and maximize nutrient uptake by plants, resulting in an impressive 30% yield increase. With Evergrow, you can unlock the full potential of your crops and reap the rewards of your hard work.

Enhanced Soil Fertility

Evergrow's composition is rich in humus, organic matter, and a wide range of macro- and micro-nutrients. This unique blend creates a "living soil," abundant in carbon and beneficial microorganisms. Additionally, Evergrow aids in water retention and soil aeration, promoting a healthy and balanced soil environment for optimal crop growth.

Improved Crop Disease Tolerance

Stronger plants, fortified by enhanced nutrition and balanced soils, possess a natural ability to resist disease and ward off pest attacks. With Evergrow, you can witness your crops become more resilient, reducing the risks and losses associated with crop diseases. Protect your investment and cultivate a healthier, disease-resistant harvest.





Feed the Soil, Feed the Plant !



IMARISHA AFYA YA MIMEA



IMARISHA UDONGO



HIFADHI MAJI ZAIDI SHAMBANI



IMARISHA MAZAO NA ASILIMIA 30%

EG + Mineral fertilizer = 30%

Order now!

☎ 0718800330

✉ info@farmstar.co.ke

🌐 www.farmstar.co.ke

- ✓ Improves soil fertility, health and microbe activity.
- ✓ Improves uptake of minerals.
- ✓ Reduces soil acidity.
- ✓ Improves crop disease tolerance.
- ✓ Improves water retention capacity.
- ✓ Available country wide.

Reduced Dependency on Chemical Fertilizers

Evergrow's ability to enhance nutrient availability allows farmers to maximize the impact of their chemical fertilizer applications. As your crops receive a more comprehensive nutrient profile, you can gradually reduce your reliance on chemical fertilizers over time. Not only does this contribute to sustainable farming practices, but it also helps you achieve cost savings.

Quality Assurance and Compliance

At Farm Star, a key priority is the quality and safety of products. Evergrow Organic Fertilizer is KEBS certified, and each batch undergoes rigorous testing by independent laboratories using ISO-certified processes. Rest assured, you are receiving consistent quality and a reliable product that meets the highest industry standards.

Supporting Best Practices

We understand the importance of compliance and are committed to supporting your farm's regulatory requirements. Farm Star provides Material Safety Data Sheets (MSDS), nutrient and pathogen analyses, and other technical data sheets to ensure internal and external farm compliance. With Evergrow, you can confidently implement best practices and cultivate your crops with peace of mind.

Success Stories and Customer Testimonials

Evergrow has already made a remarkable impact on farms across Kenya. Farmers who have embraced Evergrow Organic Fertilizer are witnessing extraordinary results. Faustine Kithaka, a satisfied customer, shares, "My passion fruits are growing faster, and harvests are bigger." Beth Wanjiru adds, "My melons look healthy, and I harvest earlier and for longer." Join the ever-growing community of farmers who have experienced the transformative power of Evergrow.

Conclusion

Farm Star's Evergrow Organic Fertilizer is more than just a farm input; it's a pathway to increased productivity, sustainable farming, and success in your horticultural endeavors. Nurture your crops, improve soil health, and achieve higher yields with Evergrow. Its remarkable variant, Evergrow Gold, offers you the tools to nourish your crops, expand your horizons, and achieve unparalleled success in the export market. Unleash the potential of your farm and be a part of the growing number of farmers who have already benefited from this remarkable organic fertilizer. Experience the Evergrow difference and reap the rewards of your hard work while contributing to a greener, more prosperous future.

For more information or to order Evergrow Organic Fertilizer, visit www.farmstar.co.ke or contact Tel: +254 718 800 330 and info@farmstar.co.ke



Engaging men to advance women's economic outcomes

By Cynthia Cheshar

Over the years, there has been a growing interest among development actors, government researchers, and scholars on the role of male engagement in promoting gender equality. While the area is relatively new, several studies have contributed to the growing evidence that male involvement in various roles can significantly improve gender equality outcomes particularly in the elimination of gender-based violence and HIV programmes.

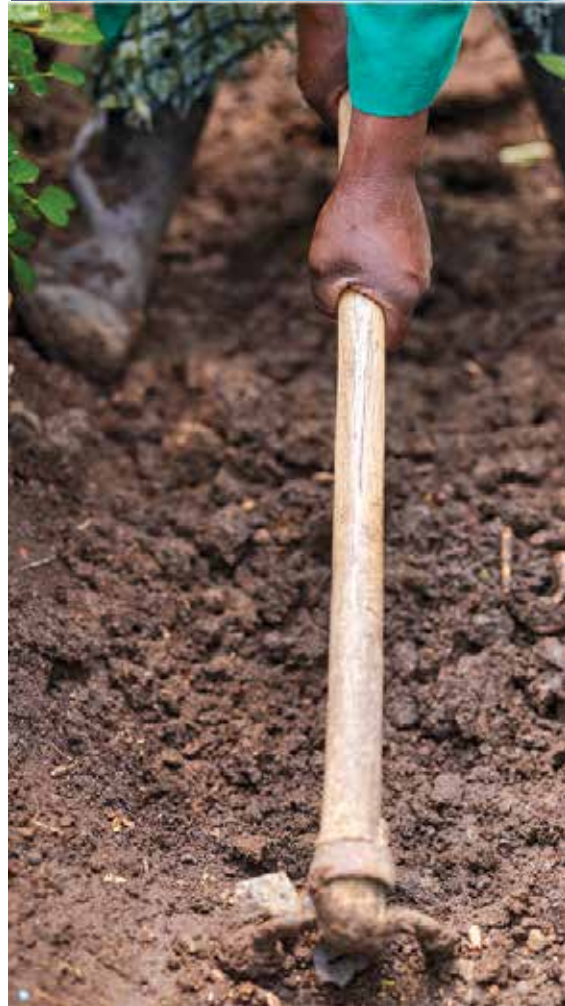
In the context of empowerment, data is still scanty, however, practitioners believe if strategically implemented male engagement can lead to positive outcomes for women's economic resilience.

Under the 5 year Building Bridges for Women's Economic Empowerment Programme funded by the Ministry of Foreign Affairs in The Netherlands), Women Win has been working to promote gender equality in global supply chains in partnership with women's right organisations (WROs). In the programme, Women Win works with WROs to identify the priorities of women supply chains that can contribute to their economic advancement. This is done through participatory methodology

called Drawing the Line (DTL). The priorities identified are thereafter presented to management, deliberated upon and one priority area selected to be addressed through 'a Collaborating for Impact' (CFI) project, that is co-designed by the farm management and WROs. So far, this has been done in the floriculture and tea sectors in Kenya, two of the top revenue earners for the country.

In partnership with Workers Rights, Watch and Haki Mashinani a DTL assessment was able to identify the most important priorities for women working within two flower farms in Naivasha. While the exercise is designed for women workers, the DTL incorporated a different approach that engaged men in the two flower farms. The exercise allowed the men to reflect on the gender gaps within their workplace that impact productivity and advancement of their female colleagues. Consequently, they identified areas they felt should be strengthened for better gender equality outcomes within the farms.

The men engaged identified three out of ten priority areas that in their view would enhance gender equality.





The priorities identified in one of the farms were: access to health information and health cover; support for women's work-life balance; and the provision of opportunities for women to learn new skills that would enhance their economic outcomes. Interestingly, women on the same farm also identified work life balance and skills enhancement as key priorities. The two issues identified also correspond with the eight building blocks for women's economic empowerment.

First, women spend a significant amount of time fulfilling the expectations of their domestic and reproductive roles. The disproportionate amount of time spent by women on unpaid carework has a direct and negative impact on their paid labour

outcomes. It affects the amount of time spent in paid employment and quality of paid employment.

Addressing unpaid care, is therefore critical in advancing women's economic empowerment. Secondly, advancement to higher value

positions within the value chains often is tied to skill sets and access to productive resources.

In the flower value chain, women are employed on temporary seasonal contracts that offer limited opportunities for skills upgrading or promotion. This perpetuates women's continued role as temporary, seasonal labourers.

Skills development through training programmes can equip women with the skills and knowledge they need to participate in GVCs, including training on economic upgrading opportunities. Thus the outcome of the DTL suggests that men and women could sometimes share common concerns when it comes to gender equality and that engaging men can help to create a more inclusive and supportive workplace.

Following the DTL exercise, CFI projects have been designed for the two farms and besides the women, specific activities that will involve men will also be carried out.

Women Win believes it is important to continuously reflect on and recognise the power structures in the contexts within which we work. For example, men predominantly still hold positions of power in society and workplaces, and have traditionally perpetuated patriarchal norms. As such, instead of blaming and shaming, engaging men as allies, stakeholders, champions and co-beneficiaries presents an opportunity to challenge these norms and create a more equitable society. Transforming their roles and attitudes can help reverse harmful practices, making men engagement a crucial component of gender equality programming.

By involving men in the women's economic resilience we hope to create ownership of the project and have men as key allies in achieving the following outcomes:

- Creation of healthier workspaces and greater gender equality in society.
- Increased support for women workers at the workplace. As men may have more access to resources, networks, and decision-making power.
- Enhanced Communication: By including men in these programmes, communication, and collaboration between men and women can be improved, leading to a better understanding of each other's experiences, needs, and perspectives.
- Greater Impact for the programme's effectiveness: By addressing the root causes of gender inequality and creating lasting change in workplaces.

Overall, the importance of engaging men in gender equality programming cannot be ignored. By working together, men and women can create a more inclusive and supportive workplace that benefits everyone.



Disease Management in Roses

POWDERY MILDEW



Powdery Mildew is caused by the fungus *Podosphaera pannosa* syn. *Sphaerotheca pannosa*. Powdery Mildew affects young leaves, causing them to curl and twist and develop a purple coloration. As the disease progresses, leaves become covered with white powdery fuzz. Whereas blackspot is usually most severe on the lower part of the plant, powdery affects the top part of the plant. Mature leaves are less likely to be affected. Powdery mildew is spread by wind and develops rapidly during periods of warm, dry days followed by cool and humid nights.

Infections of Powdery Mildew are discouraged by the presence of water on the leaves. However, keeping plants wet all night to avoid mildew provides an environment that allows other diseases to develop. Prune out all dead and diseased canes to reduce initial fungus infection.

DOWNY MILDEW



The fungus *Peronospora sparsa* causes Downy Mildew. Purplish-red or dark brown, irregular, and often angular, blotches develop on leaf surfaces, and during humid weather a blue-grey, downy growth of fungus may appear on the undersides. The leaves droop, turn yellow, and may drop. Stems and calyces develop purple or blackish spots, streaks, or blotches. Petals have brown, dead areas. Infected buds may produce deformed flowers. Spores are wind-borne but need free water on the leaf surface to germinate.

Downy Mildew can be prevented by improving ventilation and aeration.

BOTRYTIS



The fungus *Botrytis cinerea* affects most above ground plant parts. Botrytis generally attacks dying tissue and frequently found on older flowers and other plant parts. Under certain conditions it may also attack healthy tissue. Botrytis favors moist, wet conditions, often causing the disease to attack entire flowers and produce a gray fuzzy mold. Purple lesions occurring on canes are often caused by botrytis. Spores are wind-borne and can be spread on garden tools like secateurs.

Prevention is the best approach – use of resistant varieties, optimum irrigation, proper ventilation, pruning and destruction of infected canes, leaves and flowers, and proper sanitation should be practiced.

PHYTOPHTHORA AND PYTHIUM ROOT ROT



The root ball may be water-soaked and brown and none or few new white roots may be seen. Phytophthora Root Rot may be caused by more than one species of the pathogen. Common sources of *Phytophthora cinnamomi* are infected soil or irrigation water that has been in contact with the soil, for example, dam water. There is no cure for infected plants, but the disease may be suppressed with the use of phosphonate products.

Pythium affects plants in a similar manner but is more often a sign that the plants are being stressed in some other way, for example, by high salinity, low pH, or waterlogging.

Fungicide solutions from Agrichem Africa Limited®

TRADE NAME	ACTIVE INGREDIENTS	TARGET DISEASES	DOSAGE / Ha
AGRIBATE 52.5%WDG	Famoxadone 225g/Kg + Cymoxanil 300g/Kg	Downy Mildew	400g
ALIGATOR 500SC	Fenhexamid 500g/L	Botrytis	1 Litre
PIRANAH 200SC	Prochloraz 100g/L + Iprodione 100g/L	Botrytis	200ml - 400ml
TUCKER 700WDG	Dimethomorph 500g/Kg + Cymoxanil 200g/Kg	Powdery Mildew	600g
ZETACURE 720WP	Mancozeb 640g/Kg + Cymoxanil 80g/Kg	Botrytis; Downy Mildew	2 Kg
ZETANIL 76WP	Mancozeb 700g/Kg + Cymoxanil 60g/Kg	Botrytis; Downy Mildew; Leaf Rust	2 Kg - 2.5 Kg



Your Partner in Agriculture



PIRANAH 200SC®

Prochloraz 100g/L + Iprodione 100g/L

A fungicide with protective, curative, eradicated and residual disease control treatment effect for the control of Botrytis in Roses; acts by inhibiting spore germination. Redistribution via the vapour phase contributes to activity within recommended range

www.agrichemafrika.com



Orchard Picks Ltd; Growing is their business and they're good at it

Three years ago, in the vibrant Kajiado County, Athi Kapiti plains; an idea christened Orchard Picks by Ameer Dave was conceived. The new venture was to farm vegetables and fruits for export.

They started development on the first phase of the 30 acres in May 2019, and the first bunch of crop which was French beans was planted. That initial investment has now metamorphosed into 30 hectares of vegetables and fruit farming powerhouse that is being taken care of by a hardworking team of 30 workers employed on permanent terms. Orchard Picks is recognized as a brand of choice in the global markets. To date, the farm operations remain inspired by passion for quality, continued innovation and a drive to be the best in vegetable farming.

The story and journey of Orchard Picks begins when mother and son duo, Ameer Dave and Gopal Goldthorp having lived and worked in UK decided to relocate back to Kenya, to join the family group of businesses PJ Dave Flora. Ameer is the daughter to flower grower behemoth, the late Pravin Dave (May God rest his soul in peace). With time they set up their

own company to compliment their mother company.

Their production is synonymous with quality, consistency and persistence. Each process is carefully observed from the farm to the market. "Since we begun cultivation, our primary focus has been quality we do not beat around the bush over it. As you are aware, the export market is very strict when it comes to MRLs. If your produce is rejected, you end up soiling your name and buyers will tend to shy away from you. We grow an array of crops which include; French beans, dragon fruits, cabbages, avocados, chilies, baby corns among others. French beans are our biggest production," said Gopal Goldthorp.



BY STEVEN MULANDA



Harvested french beans awaiting to be transported to their packhouse



Gopal Goldthorp of Orchard Picks Ltd at their french beans farm in Isinya

With farming of this high value crops requiring specialized training, the farm has tapped into local workforce whom they have been able to train on good agricultural management. They have been pivotal in transferring the knowledge to local workforce, majority of them being women. The workers have undergone theoretical and practical training on farming including planting, bed maintenance, weeding, irrigation, harvesting and packaging. “We are fully committed to protecting the rights and working conditions of the workers. We look after our workers, adhering to and going beyond International Food Standards,” he said

According to Gopal, Orchard Picks sits in the beating heart of the community. The previously sleepy village has now become a thriving little town suburb with housing, the farm and a school.

the produce in good time as well as paying the farmers. Unfortunately, the consumption of French beans in Kenya is still low. “At the beginning, we used to sell our produce to other exporters who are exporters but currently we have mastered the art of growing and we are now able to export by ourselves,” he stated.

Orchard Picks has worked on maintaining the highest levels of good agricultural practices, environmental sustainability, judicious use of water through drip irrigation, filling of galls to mitigate against soil erosion and empowering their farmhand through trainings. As a result, the company has attained Global GAP & GRASP certification

staff members. They also actively support animal rights by housing almost 700 cows and bulls which would have otherwise been sold off to slaughterhouses.

“We collaborate, working with other farms to source exactly what our customers requires. We are recognized for our people-orientated, personalized approach. Our family, our team, our suppliers and our clients work as one big, happy family. We strive to satisfy our



Dragon fruits growing at Orchard Picks Ltd



Women harvesting French beans at Orchard Picks farm in Isinya

Kajiado County has very good virgin soil and fertile land, availability of unexploited land for farming, trainable local youths and women, and it is proximate to the Jomo Kenyatta International Airport (JKIA). These factors have placed Orchard Picks at an advantageous position of supplying fresh vegetables all year round.

French beans are one of the major export crops from Kenya that is propelling the country to the pinnacle of greatness. It is a fascinating venture especially when on contract basis and companies involved are committed in picking up

for environment and good agricultural practices. “We have invested heavily in water harvesting; the key to success in French bean farming is water since they are heavy feeders. Besides, we have drilled a borehole,” he said.

In what demonstrates Orchard Picks commitments to people, the company has been involved in CSR activities ranging from investment in the education sector by building a school serving around 400 students, construction of roads and also has a medical facility for their

customers to the best of our ability, providing a fast, professional and seamlessly efficient service. For our future, we have huge chunks of land and we are anticipating expanding the area of cultivation,” Gopal stated.



Harvesting French beans at Orchard Picks farm in Isinya



Hope Mutanu one of the Directors of Meshope Hydroponics; the company is involved in production of tomato farming

Tomato farming putting a smile on a young Kajiado County farmer

BY STEVEN MULANDA

This is the scintillating story of Hope Mutanu a tomato farmer who started off farming in Kibiko area, Kajiado County under the flagship program of Kenya Commercial Bank (KCB) with partnership with MasterCard foundation. She has christened the farm as Meshope Hydroponics. Her journey to tomato farming began when her bosses decided to lay her off.

“We have decided that we are not going to renew your contract,” said my boss. These words made my whole body go numb for a second. The only other time I’ve ever experienced this type of feeling was after receiving the news of dad’s demise.

The world around me went into a standstill. Luckily in November 2019, I saw light at the end of the tunnel. I secured a scholarship via KCB Bank and Master Card Foundation. The scholarship has allowed many youths access quality education in terms of training in hydroponic farming. It also accords the youths the opportunity to access capital via a grant, that many cannot access because they lack collaterals and are unemployed.

I was elated to be among the few beneficiaries selected for the third cohort. I did not possess prior knowledge in agribusiness but I welcomed the opportunity with open arms. While undertaking the course, I made several friends. One of the friendship resulted into partnerships. A key requirement for the grant was that, one had to be in a partnership.

As a result, my partner, Meshack and I founded Meshope hydroponics,” she lengthily explained

Young Africa Works Kenya; is a partnership between KCB Bank and Master Card Foundation, with support from the Government of Kenya which seeks to deepen social impact in the community by laying the foundation for gainful employment through training and funding over 600,000 entrepreneurs. The program intends to run up to 2030.

“The Master Card Foundation’s new strategy, Young Africa Works, outlines how over the next decade we will focus on finding solutions to the youth employment challenge and reducing poverty in Africa. When young people can secure formal work and a steady wage their lives improve. Employment, particularly formal employment is a leading pathway out of poverty for families.

Using youth employment as a measure of our progress, we will work to help millions of young people find a pathway out of poverty. Our work will ensure

Distributors of Agricultural Sprayers & Protective Gear

The Number One Farmers Choice.



300 litres trolley sprayer



400 litres trolley sprayer



1200 Litres Sprayer with Hosereels



Boom Sprayer



2300 Litres Sprayer



Mist Blower



Central Spray Unit



Water Bowser Image



AR30 power sprayer



4 Stroke Power Sprayer



600 Litres Trolley Sprayer



100Ltrs wheelbarrow sprayer Motor

Knapsack Sprayers



GSP3-20



GSP15



16Ltrs Manual



20Ltrs Manual



Portable Sprayer



Trolley Hosereels



Vehicle mounted sprayer

Other Accesories



High Pressure pipes



A Spray hose pipes

Personal protective Equipment-PPE



Gloves



Spray suit



Thermal fogger



Mini Fogger



CG19 Spray Gun



Guns



TF 600 Pump (MOTOR)



PPE Respirator

Pan Agric Kenya Ltd

Kenya largest supplier of Agricultural Sprayer and Equipments

P.O BOX 64311-00620 Nairobi. Ruiru Kamiti -Rd Next to Ruiru Prisons staff College.

Mobile: +254 722 854 191 / +254 722 286 269 /0733402532, Landline: 0208006682

Email: sales@panagric.co.ke / sales@panagric.com /info@panagric.co.ke

FaceBook: panagric, Tweeter handle: @panagrickenya

Website: www.panagric.com / www.panagric.co.ke



30 million young people in Africa, particularly young women, secure dignified and fulfilling work,” states <https://kcbgroup.com/foundation/kcb-foundation-and-giz-intensify-support-for-youth-in-agriculture/>

According to Mutanu, KCB and Master Card advises the youth to plant high-end horticultural crops which have a shorter period to maturity and can easily be grown in greenhouses. The crops preferred are tomatoes, lettuce, capsicums, eggplants and cucumbers.

At the beginning Meshack and Hope tried their hands on onion farming, but the business became unfeasible due to the unpredictability of the market and other factors beyond their control. This led to looking for a high value crops that were more sustainable and had more return on investments.

“Tomatoes are highly valued. The normal households always budget for tomatoes and they are majorly used as; canned, juice, ketchup, paste, purée, sauce and passata among others. Besides, we have a contract with a company which manufacturer’s tomato sauce and they usually pick the produce from the farm. The returns from them are more and sustainable,” she said.

It is a fascinating venture especially when on a contract basis or in bulk. Many individuals will never forgo a day without consuming tomatoes in one way or the other.

The nitty-gritty of good quality tomatoes is dependent on various factors which includes; following good agricultural practices, being hands on, on crop management especially when dealing with pests and diseases and being more cultural while applying preventives. Secondly,



Harvested tomatoes from Meshope hydroponics. The company is one of the beneficiaries of Kenya Commercial Bank (KCB) with partnership with MasterCard foundation that is laying the foundation for gainful employment to the youth across Kenya.

the duo are agronomists having researched and undergone trainings on pests management and also through studying the life stages of every crop they are planting. For instances she avers that after two to three weeks of planting there will be build up of white flies which they apply organic pesticides for their control. “One of the methods we have deployed in controlling pests is crashing pepper, ginger and neeme and mixing them with water. This mixture has a pungent smell and it also scorches. If by any chance there are pests in the greenhouses, immediately it lands on the pores of the pests they are scorched and they die,” she said.

Her parting shot; as a youth, I would urge you if you are unemployed to try and do something; regardless of whether it’s in your field of study or not. You have higher chances of innovating

when you encounter challenges in the work environment. Moreover I would implore on the youth to try their hands on hydroponics farming. It has many benefits in comparison to traditional soil-based farming. The farmer is able to control the PH and nutrient solution to make sure that the plants nutritional needs are met. The farmer is able to control temperature and lighting since the crops are grown indoors as a result, production is improved. For the same area, production improves up to 10 times with hydroponic adoption. Since hydroponic farming is soil-less farming, it can be practiced in areas where soil conditions are not favorable. No chemical, weed or pest control products required in hydroponic farming. On the other hand, the biggest challenge with hydroponic farming is the set up cost. The initial cost is quite high.



*One -stop shop for quality
range of products at best
possible prices*

Our Products

- Packaging Equipment
- Safety Equipment
- Uniforms
- Coco peatharvesting tools
- Propagation pots & trays
- Polythene bags & sheeting
- SFK Papers and flower Boxes
- Spray Hose Pipes
- Watering Hose Pipes
- Agricultural Lime
- Gypsum Fertiliser

Packaging Equipment



Rubber bands



Strapping Machine



Green house tape



Cellotape



Strapping Rolls

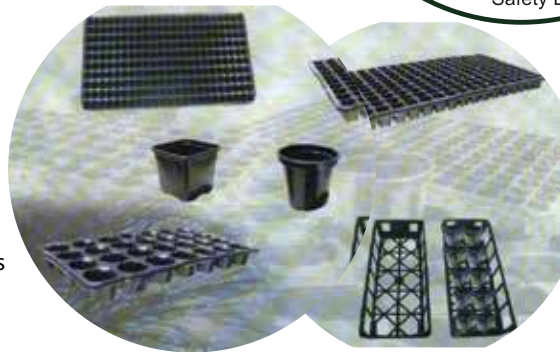


Tape Dispenser

Coco Peat



Propagation pots & Trays



Safety Equipment



Gum Boots



Respirators



Face Shield



Safety Boots

Uniforms



Overalls



Dust coat



Security Uniforms



Apron



Glue Guns



Glue Gun Sticks



Spray Lances

Harvesting Tools



Harvesting Net



Guillotine Machine



Harvesting Gloves



Pruning Shears



Uv Treated Twine
Support Net



Support Net

Planting Propagation pots

- 82 mm Dia Round
- 105mm Dia Round
- 120mm Dia Round
- 150mm Dia Round
- 7mm x 7mm x 6.5 mm

Planting Seed Trays

- 28 hole
- 66 hole
- 91 hole
- 160 hole
- 204 hole
- 230 hole
- 288 hole

AFAPACK ENTERPRISES LIMITED

0722 525128, 0701 080641, 0701 080631

afapack@africaonline.co.ke
sales.afapack@africaonline.co.ke

visit us @ www.afapack.co.ke

MEALYBUGS IN ROSES

Considered to be small soft scale insects, 3-5 mm long, elongate with oval and to somewhat flattened shape. The mealy bug is often surrounded sticky wax floury or cornmeal-like whitish wool like mass.

They suck sap from tender leaves, petioles and other soft plant parts. Their favorite points are crevices between branches and the underside of plant leaves.

Life cycle of Mealybugs

- Mealybugs may be oviparous, viviparous, or ovoviviparous. Their eggs are usually laid in loose masses of cottony wax (cotton-like pouch) ovisacs. Females can lay up to 500 eggs, which takes them 5 to 10 days. After laying the eggs, the females die.
- Males are tiny wasps that are rarely seen in the crop. (mealybugs are sexual dimorphic, females look totally different than males.)
- Females are covered with white, waxy threads. They appear as full-grown nymphs.
- Females and nymphs live in clusters in protected places such as the leaf axils and underneath loose bark.
- Their life cycle depends on the temperature, it takes them about 90 days to develop from egg to adult at 18 °C and 30 days at 30 °C

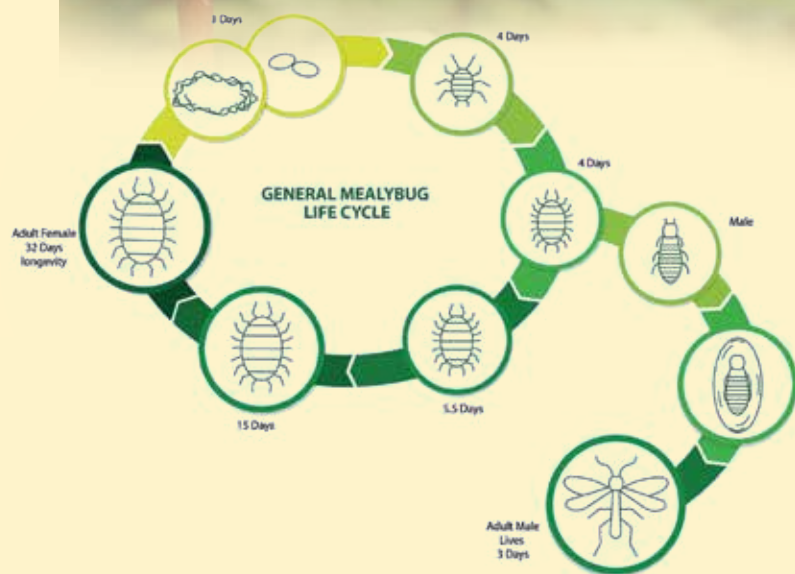
Symptoms and Mealybug damage on the Roses

Mealybugs feed on the phloem by sucking sap from plants, causing damage to plant tissue.

Symptoms may include stunting, yellow or wilted leaves, deformed growth, loss of flower buds, defoliation, and chlorosis. Honeydew excretions can interfere with plant photosynthetic ability, affecting production as well as affect the market value of the cut stems (fungus called sooty mold which blackens the leaves, branches) which affects the crop. With extreme infestations, plants may die.

Mealybugs Management

Integrated Pest Management (IPM) program involving monitoring of pest population, cultural applications, practices, biological control and insecticide interventions. Deep understanding of the insect's biology and survival



mechanism if key to effective management. The Mealybugs can reach damaging population levels quickly as adult females lay up to 600 eggs within a short duration. Once the eggs hatch, immature scale crawlers can spread to new plant parts and new hosts and at this stage, population buildup becomes exponential.

One of the main challenges in the management of Mealybugs is the pest's ability to hide in crevices between branches and the underside of plant leaves.

Cultural control and sanitary measures

- Destroy affected parts at the beginning of the infestation. Heavily infested branches may be pruned to control the pest, especially on the tender branches before flowering begins.
- Conserve natural enemies. - Avoid excessive spraying and the use of broad-spectrum pesticides, since they may kill natural enemies.

- Green house hygiene: regularly sweep debris away as these tend to be egg incubation hotspots. Unwanted material such as dead foliage, and hanging leaves should also be cut to allow the crop to open up during the early stages of plant development.
- When necessary, spray only the affected branches/Plants/green house sections (spot spraying) with soapy solutions
- Avoid nitrogen-excessive nitrogen fertilizer and overwatering: Nitrogen stimulates tender new growth

that mealybugs prefer, and may lead to increased egg production. Too much water can also lead to excessive new growth.

- Mealybugs are less mobile on plants than other pests. They often spread from one plant to another with the aid of other insects such as ants. This makes ants another important pest to monitor for cultural management

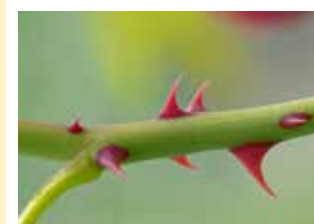
Chemical Control

ACETASTAR 46EC

Acetamiprid	Bifenthrin
Acetamiprid is a neonicotinoid insecticide that works by antagonizing the nicotine acetylcholine receptors in the neural pathways. This causes interruption of brain signals throughout the insects body. Insects are affected within 30 minutes of treatment with excitement, then paralysis, and finally extermination. Acetamiprid is an ovicidal, larvicidal, and adulticidal, meaning it works at all stages of insect development. Insects are affected mainly by ingestion, and may be affected by some forms of contact as well. Acetamiprid is translaminar, meaning it protects both sides of a leaf surface.	Bifenthrin is a Type I pyrethroid. Acts by contact and ingestion on nymphs and adults of the pest It affects the central and peripheral nervous system by interfering with sodium channel gating. Pyrethroids delay the closure of the sodium channel modulators. Type I pyrethroids tend to hold the channel open for shorter times compared to type II pyrethroid. Bifenthrin is effective against mites as well as sucking and chewing pests

Benefits of using ACETASTAR 46EC

- It achieves a high-level control in wide range of spray programs.
- Combination of both systemic and translaminar effect of Acetamiprid as well as contact and ingestion act of Bifenthrin.
- Enhanced performance of presented by the synergy of the modes of action.
- Acts on wide variety of crops- Vegetables, Ornamentals and cereal crops
- 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.



For effective Mealybugs control with **ACETASTAR 46EC**, tank mix it with **WETWAX LIQUID**. Mealybugs have the waxy surfaces making it difficult for water based insecticides to penetrate. **WETWAX LIQUID** the ultimate tank-mix partner for Pesticides, Nutrients solutions and Plant Growth Regulators (PGRs).

WETWAX LIQUID

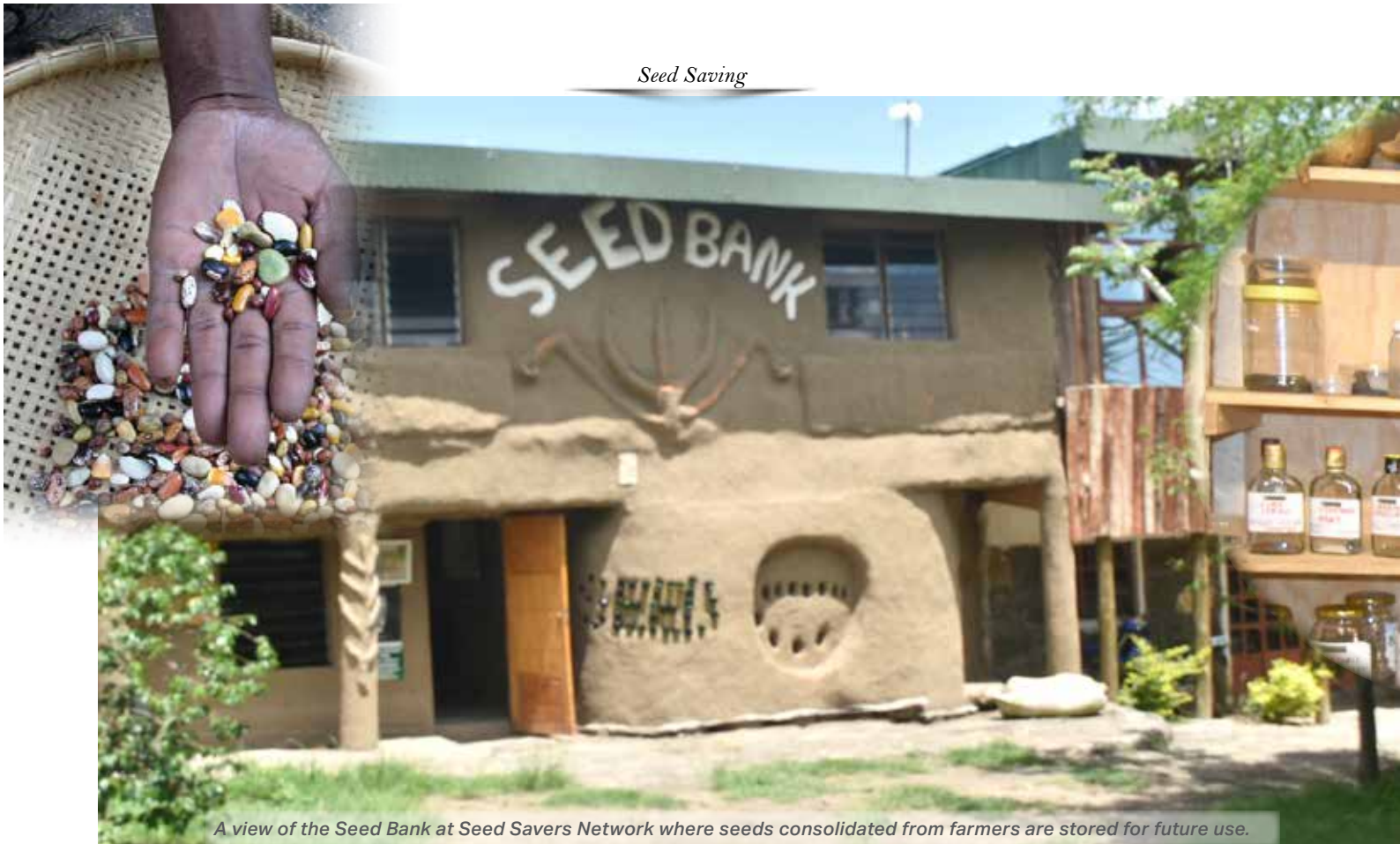
An organosilicon wetter/spreader/penetrant/uptake enhancer product for use as a spray additive. It has super-spreading ability combined with improved deposition of droplets, improves adhesion of chemicals in wet weather. For use with low volume applications to enhance the spreading and foliage deposition of fungicides, insecticides, and foliar nutrients.



Article by: George Kariuki
Managing Director,
ZIVA AGRIVENTURES LTD



For more product information write to
md@zivaagriventures.co.ke;
customercare@zivaagriventures.co.ke;
zivaagriventures@gmail.com
or call +254 769 213293



A view of the Seed Bank at Seed Savers Network where seeds consolidated from farmers are stored for future use.

Seed Savers Network; saving seeds for generational use

Seed saving is a golden idea that has not been fully embraced by Kenyan farmers. In 2009, a group of farmers in Gilgil hatched the idea of preserving seeds. This was occasioned by lack of diverse seeds in the market and agro-shops. For instance in their course of cultivation, they discovered that out of 100 varieties of beans, they could only find 4 varieties for planting while the rest could not be accounted for. The baffling part of the story was, while traversing across villages, farmers could recall and describe different characteristics of beans but could not understand how they disappeared. Due to their families' nutritional needs and for future generational use, they birthed Seed Savers Network (SSN) which is being chaperoned by Daniel Wanjama as the Director.

The main door leading into the seed bank has been beautifully decorated with a variety of seeds including red beans, white rice, green grams as well as red and brown sorghum. Inside the seed bank; a one storey house made

of mud and refurbished materials, a variety of maize, legume, vegetable and pumpkin seeds are hanged on the wall while others are stored in small containers.

SSN began with 50 farmers at the beginning, but today the network has morphed to 66,000 farmers organized in groups of 20 farmers and spread out across the country. Seeds are the basis of agriculture, carriers of the genetic makeup of plants and the soul of food systems.

In Kenya, over 80% of seeds used by smallholder farmers are sourced from 'informal', or farmer-managed seed systems. Farmers have been managing seed and propagating plant materials through on-farm conservation, maintenance, and selection for diversity. They save, re-use, exchange, and sell seeds amongst family, neighbors, and communities to produce the bulk of their food. However, smallholder farmers increasing face difficulties in accessing, using, and multiplying seeds. Farmer-managed seed

systems are under pressure from the commodification and commercialization of seeds through exclusive intellectual property rights, such as patents and breeders' rights. Free and open access to seeds is key to sustaining and strengthening farmer-managed seed systems and improving food security.

According to Julia Kamau, Head of Programs at Seed Savers Network, the organization is a farmer led initiative dedicated to promoting food and seed sovereignty. It safeguards plant genetic materials through on-farm seed saving, community seed banks, and field gene banks. "The gist of seed saving is conservation. It does not stand alone; it goes hand in hand with production work. With production, we are doing agro-ecology kind of farming where chemicals and pesticides are not allowed. We are also have training center where farmers come and practically learn on how to carry out the whole process of seed production," she said.

Some of the indigenous seeds that are being conserved by Seed Savers Network, domiciled in Gilgil Nakuru county.

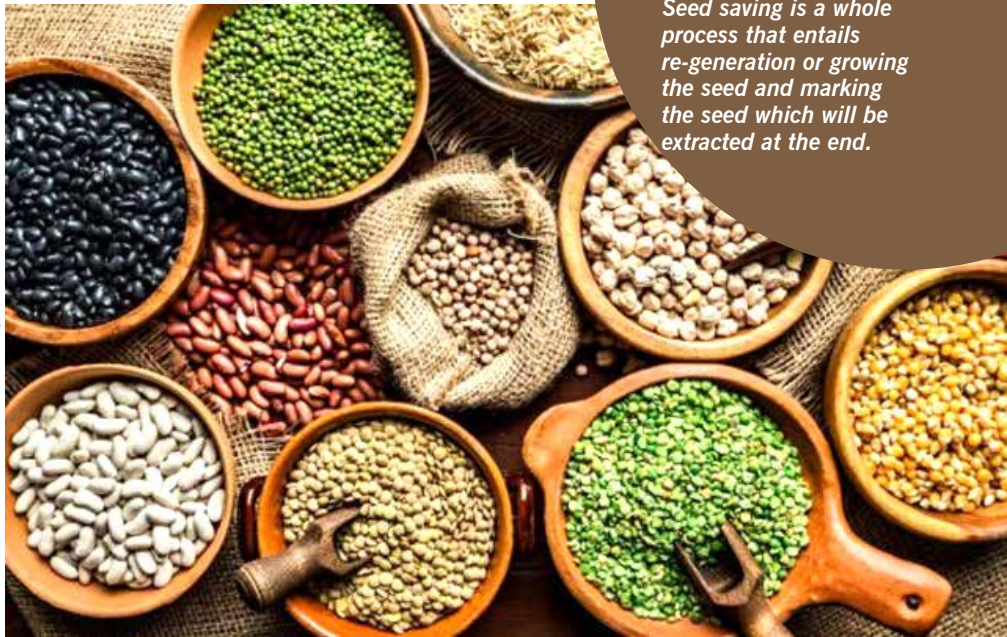


Seed saving is a whole process that entails re-generation or growing the seed and marking the seed which will be extracted at the end.

“First, SSN carry out diversity assessment and store most of the neglected under-utilized species but unfortunately they are in small quantities and we require them in big quantities for them to be sustainable for a long time thus where regeneration comes in. For conservation, we don’t store seeds on the shelves for a long time, but a maximum of three years, thereafter we test their viability before we re-generated them again. Currently we are re-generating 5 types of crops; sorghum, pigeon peas, cowpeas and millet for long time conservation in a freezer at -20 degrees,” opined Mary Wambui, Program officer at SSN.

The first step for seeds storage in the seed bank, is to check on the moisture content to confirm if they are dry enough to a prescribed percentage depending on the variety. A germination test is done to check on the viability of the seeds. The germination rate should be 85% and above for the seeds to be banked. The day the seed are stored in the seed bank is then recorded.

“At SSN we use a farmer to farmer extension model to train farmers on agro-ecology and facilitate the spread and adoption of seed saving, regenerative farming practices, and food sovereignty ideals. This capacity-building model leverages on farmer’s traditional knowledge and information and builds on local conditions and practices already



Seed saving is a whole process that entails re-generation or growing the seed and marking the seed which will be extracted at the end.

known to farmers. Contrary to a top-down approach, this is inclusive, low-cost and has a multiplier effect that ensures successful introduction of agro-ecological practices in rural areas to ensure sustainable livelihoods,” Julia Kamau, Head of Programs at Seed Savers Network stated

“Some of the Kenyan laws on seed prohibit exchange within farmers. One of the main workforce of SSN is to work on changing that policy. For instance there is a case in court where farmers have sued the government, in challenging the seed and variety Act of 2012, which stipulates that sharing and exchange of seeds is defined as selling, which is illegal. But in the Kenya constitution it is stipulated that

it has given farmers cultural right to celebrate culture and seed exchange which classified as a cultural practice. This is what we want to deem the Act as unconstitutional because The Constitution is supreme than the Act,” she explained on the biggest challenge they have encountered over the years.



Julia Kamau (R), head of programs at Seed Savers Network, the organization is a farmer led initiative dedicated to promoting food and seed sovereignty. With her is Mary Wambui, Program officer.



Composition	w/w
Total Humics Extract:	40.00%
Humic Acids:	32.50%
Fulvic Acids:	7.50%
Iron (Fe) EDDHA:	3.00%
Potassium Oxide (K ₂ O):	4.60%
Solubility:	120 - 150g

Humic fertilizer is a natural bio-stimulant with high concentrated organic material derived from European Leonardite. Consisting of carbon, oxygen, hydrogen, phosphorous and sulfur. Hum 3 can be applied through drench or as foliar spray.

Key benefits of Hum 3

- Soil conditioner improving structure and increase CEC.
- Stimulates biological activities in soil.
- Enhance nutrients uptake by combining nutrients and humics acids and keep a well-balanced nutrition.
- Improves chemical and physical qualities of soils.
- Plant growth stimulant and promote root development.
- Fertilizer effectiveness promoter, greatly boosting the usage of nitrogen fertilizer with 60% easily offered and 40% as slow release fertilizer.
- boosts the durability of crops, such chilly, dry spell, pest disease as well as toppling resistance.
- Promotes healthier, strong plants and enhance appearance.
- Reduced consumption of iron by 50%

Recommended rate hydroponic 1.5 kg per ha per week and 3kgs per ha per fortnight on soil media.

Chemicals benefit

- > Helps convert elements to plant food.
- > Rich in organic / mineral substances.
- > Retains soluble fertilizer in root zone.
- > Has high ion exchange capacity.
- > Time release of nutrients as required.
- > Stabilizes nitrogen applications.
- > Breaks down salt complexes.
- > Buffers soil PH.
- > Absorbs toxins like salt, water and pesticides.
- > Carbon charges bind to the toxin molecule, allowing microbes to break it down.

Biological benefits

- > Boosts growth of desirable soil life.
- > Improves plant respiration
- > Stimulates plant enzyme.
- > Increase vitamin content of plants.
- > Stimulates growth at all stages.
- > Feeds microorganisms that recycle nutrients and produce antibiotics.
- > Regulates growth hormones.

Physical benefits.

- > Make soil more friable or crumbly – breaks up hardpan.
- > Increases water holding capacity up to seven times.
- > Breaks down crop residues
- > Increases aeration of soil.
- > Stabilizes soil temperature.
- > Restores and enlivens tired, worn out soils
- > Improves soil work ability.





Artico 10 SC

An insecticide for the control of aphids and caterpillars (*Helicoverpa armigera*) in crops.



Fungzil 15 EC

Fungicide for the control of Powdery Mildew in crops.



Garland Max 30 WP

Insecticide for the control of Thrips, Aphids and Whiteflies in crops



Orsil Gold

Adjuvant

E-mail: info@eabusinesscompany.com

P. O. Box: 29024 - 00100 Nairobi - Kenya

Contact: 20 240 3391



www.eabl.co.ke



INNOVATIVE DEHUMIDIFICATION Plan Helps Indoor Farmers Achieve Optimal Growth & Savings

Indoor farming has become increasingly popular in recent years, as it provides a way to cultivate crops with precision and protection from weather-related challenges. However, well-insulated modern indoor farms can create unwanted situations due to high levels of humidity caused by the closed cultivation and crop evaporation.

To combat this problem, an innovative dehumidification plan has been developed that offers significant benefits for indoor farmers. The plan includes four steps that improve humidity levels through an HVAC system within an indoor farm, in order of affordability.

The first step involves preventing localised forms of “water nuisance” to combat condensation and fungus growth. This includes fixing leaking drip systems and drainage ditches and improving the layout and design of the indoor farm to prevent moisture problems.

The second step involves introducing air movement methods, which reduce stagnant, cool air, prevent condensation and fungus spots, raise surface temperature, reduce and stabilise humidity levels, and dry moisture.

If the first two steps are insufficient, the third step involves using ventilation to remove moisture-laden air from the indoor farm and replace it with drier outdoor air. This can be done through mechanical ventilation, such as using fans or exhaust systems.

Finally, if all else fails, the fourth step involves using a mechanical dehumidification system, which can be costly but effective in achieving optimal growth conditions.

Proper dehumidification offers six advantages for indoor farmers. By following these four steps, farmers can achieve optimal growth conditions and savings, while also avoiding negative impacts on plant growth and health, personnel, machinery and equipment, and the environment.

For more information on Bosman Van Zaal’s comprehensive solutions for dehumidification in indoor farming, download their complete whitepaper on Dehumidification for Indoor Farming.

“This innovative dehumidification plan is a game-changer for indoor farmers,” says Edwin Snabel, HVAC and Indoor Farm Expert at Bosman Van Zaal. “By following these steps, farmers can achieve optimal growth conditions and savings, while also avoiding negative impacts on plant growth and health, personnel, machinery and equipment, and the environment.”

Bosman Van Zaal is an internationally operating company that provides turnkey horticultural solutions for farming facilities. With over 100 years of experience in horticulture and 30 years in indoor farming, the company offers expertise and resources to help customers succeed. CMW Horticulture is the brand name of Bosman Van Zaal within the UK region. They are a leading supplier of horticultural equipment in the UK, founded in 1989.

*We grow through ...
Partnerships*



EM-ACTIN

Emamectin benzoate 57g/L

The utmost effective insecticide and miticide in the market for use in vegetables, cereals and flowers.

PRE-HARVEST INTERVAL:
VEGETABLES – 3 DAYS, RICE – 21 DAYS,
RE-ENTRY INTERVAL: ROSES – 4 HOURS
RATE: RICE 3.6ML/15LTR, TOMATO/CAB-
BAGE/CAPSICUM/ONIONS 5ML/20LTR

Benefits

- Has a rapid knockdown and long residual activity giving better crop yield and quality.
- Highly effective at low application rate therefore less load to the environment.
- Broad spectrum with translaminar movement in plants.

TARGET PESTS:

STEM BORERS, LEAFMINERS (Tuta absoluta), DIAMOND BACK MOTH/CATERPILLARS, FALL ARMYWORMS, FALSE CODLING MOTH, THRIPS, SPIDERMITES



You need Agrochemicals ...

Think



ORBIT AGRO CHEMICAL INDUSTRIES LTD.

P. O. Box: 48870 - 00100 Nairobi, Kenya.

Agro Customer care line: +254 752 368 468

E-mail: orbitagro@orbitchem.com, Web: www.orbitagro.co.ke




Your local partners for customized greenhouse & open field solutions




Greenhouses &
constructions




Water
systems




Cultivation
systems



Heating &
cooling systems



Electrical
systems



Control systems
& software



 24/7 Maintenance & Support

Bosman Van Zaal

Flower Business Park
PO box 1820 Naivasha
+254 [0]707 00 03 08
office@bosmankenya.com

Hoogendoorn Growth Management

+31 [0] 10 4608080
info@hoogendoorn.nl
www.hoogendoorn.nl