INTERNATIONAL YEAR OF PLANT HEALTH 2020

KEPHISNEWS

A Kenya Plant Health Inspectorate Service (KEPHIS) Newsletter

MAY 2021

Announcement

3rd Virtual Phytosanitary Conference to be held from 13th-16th September 2021

By Joseph Kigamwa,
Projects Coordination Office

The 3rd Virtual Phytosanitary Conference will be held from 13th to 16th September 2021. KEPHIS and the Centre of Phytosanitary Excellence(COPE) have planned for this event whose theme is **Enhancing Phytosanitary Systems for Healthy Plants, Safe and Sustainable Trade.** Due to the Covid-19 pandemic, it will be a virtual conference with coordination at KEPHIS Headquarters in Nairobi, Kenya.

The objectives of the conference are: to celebrate the International Year of Plant Health; to provide an opportunity to share achievements and challenges; create linkages; promote market access and identify potential areas of cooperation on phytosanitary regulation at regional and international levels.

Thematic areas

1. International Year of Plant Health
2. Pest Surveillance in Phytosanitary Systems
3. Import Control and Export Certification in Phytosanitary Systems
4. Pest Diagnostics in Phytosanitary Systems
5. Emerging Innovations in Phytosanitary Systems
6. Industry Role in Implementation of Successful Phytosanitary Systems
7. Capacity Building, regulatory framework, Trade negotiations and communication in phytosanitary systems

There will be pre-recorded practicals, speeches, posters and exhibitions during the conference.

Over 150 participants from government, policy makers and horticultural industry are expected. Specifically, delegates will be from National Plant Protection Organizations from Africa and beyond, government bodies (food safety, agricultural policy, horticulture and extension), universities, farmer and exporter organizations, donor agencies, youth and others.

Language

The major language of communication during the conference shall be English with translations to French being available.

Contacts
The Secretariat
3rd Virtual Phytosanitary Conference
KEPHIS Headquarters, Nairobi, Kenya
phytosanitaryconference@kephis.org
www.kephis.org

Youth for Our Planet Group Trained on Benefits of Avocado Farming

By Catherine Muraguri
PR and Communications Office

A Chinese official being taken through inspections of avocado at Jomo Kenyatta International Airport, Nairobi before export. Kenya has recently started export of avocado to the Asian nation

Nairobi(Online) - KEPHIS has trained Youth for Our Planet group on avocado production, emphasizing that Kenya's avocadoes are among the best in the world and urging them to grow the highly nutritious fruit to uplift their standards of living.

Avocado is the 2nd most important fruit in Kenya after Mango in terms of exports; the major season for the fruit is from March to September while smaller volumes are available from October to February. Varieties include Hass which is in high demand worldwide, Fuerte, Pinkerton, Puebla, Linda, among others. Kenya is the highest producer of avocado in Africa and 8th in the world.

The training, held online, is part of sustainability initiatives of KEPHIS, where the Institution builds capacity to various stakeholders on the mandate of the Corporation. These include women, youth and persons with disabilities. Seventeen members of the group benefitted from the training which endeavored to also inculcate the benefits of venturing into agribusiness.

Ms. Asenath Koech, an inspector who conducted the training, went through the various aspects of avocado production, from getting certified seedlings, nursery establishment and management, grafting, management of pests and diseases, among others. KEPHIS also donated 20 seedlings for the youth who will grow them using the techniques they learnt from the training.

Left: An avocado orchard and right: avocado fruits

Left: a pheromone trap (yellow colour) for mitigating fruit flies; right: an avocado nursery

Opportunities in avocado production include the opening of new markets such as China and India and re-opening of the South African market, Kenya's ability to produce avocadoes throughout the year due to condusive weather, increased demand for avocado for consumption due to its health benefits as well as advanced knowledge to manage challenges, for example traps to mitigate against the fruit flies.

The young people were urged to look out for pests such as Thrips and the False Coddling Moth and diseases such as root rot.

To establish avocado orchards, participants were urged to conduct market surveys, observe the crop planting calendar, test soil and other agro inputs before planting, use quality planting materials, basal application of compost manure, recommended land preparation practices and to obtain seedlings from registered nurseries.

At the end of the training, Ms. Irene Soit, the country leader for the youth group advised that the session was beneficial as they now have knowledge on the benefits of growing avocado. "We have seen that this is a venture we can get into with the support of KEPHIS," she said.

Youth for Our Planet is a global movement of young people urging world leaders and governments to take action on the nature crisis and climate emergency.

KEPHIS Sensitizes Fresh Produce Stakeholders on Maximum Residue Limits (MRLs) and the Importance of Risk Management in the Food Industry

By Irene Maina
PR and Communications Office

Ms. Linda Maina of the ACL elaborating on the critical need of quality management systems on fresh produce.

KEPHIS conducted an awareness meeting fot 15 fresh produce stakeholders aimed at notifying them on the importance of observing proper farm management which influences the quality of the final produce. Kenya's economy is agriculture based, with 75% of the economic growth mainly on agricultural produce.

KEPHIS core mandate is to assure the quality of agricultural inputs and produce to prevent adverse impact on the economy, the environment and human health. The export market has set international market standards that is the International Standards for Phytosanitary Measures (ISPM and MRLs), established to monitor export produce and also locally consumed produce. This enhances food safety consumed by ensuring minimal or no harmful molecules in food products and animal feeds which contributes to proper human health. For the country to remain competitive in terms of agricultural production, set regulations needs to be adhered to hence maintain the export market and enhance food security.

Linda Maina of the Analytical Chemistry Laboratory elaborated on the purpose of Quality Management System which is necessary to achieve the set objective of any farm. This consists of quality planning, quality assurance, quality control and implementation. Ms Maina said well laid down documentation is the hierarchy of Manual, Policy, Procedures, Work Instructions and Records and should be maintained outlining how every work and should be carried out in all the departments in an institution. Standard Operation Procedures (SOPs) should address 'where, why, when, who, what and how' for the maximum output to be achieved.

Senior Analytical Chemist Mr. Peter Kamuti emphasized on the mandatory sampling of fresh produce and sample sizes ideal for sampling for the right results to be attained. The sample size recommended is 500g for different portions obtained from the main consignment and after analysis the result would be used to make decisions on the whole consignment based on the findings.

Different sampling methods were discussed namely cluster sampling, convenient sampling, systematic sampling and simple random sampling. The latter is recommended for this activity for its effectiveness and reliability of the result.

Senior Analytical Chemist Mr. Peter Kamuti expert elaborating on different sampling methods to the stakeholders

Senior Technologist Mr. James Woto(standing) expert explaining on the need of calibration of equipment and proper spraying of pesticides to the stakeholders

Senior Technologist James Woto sensitized the stakeholders on the importance of calibration. He said for accuracy to be obtained, calibration of spraying and other equipment is essential which minimizes any measurement uncertainty by ensuring the accuracy of the testing equipment. This helps to obtain the correct result hence increases efficiency.

In addition to calibration, he also warned that mixing chemicals and pesticides during spraying is harmful to the crops and consequently gives the produce unwanted residues that are harmful to human consumption and also cause pest resistance. This degrades the produce value since some chemicals after mixing may form other substances other than what was intended to during spraying.

Senior Analytical Chemist Onesmus Mwaniki guided the stakeholders on the need to take part in risk management. Every institution has set objectives laid down which should be achieved within a specified period. In case the bojectives are not attained, the Institution has to be prepared for such occurrence also known as the risks and their management. Stakeholders were guided on how to identify the relevant risks, address the risks in the order of priority, monitor and report on the management of the risk.

Risk management promotes good management and in some cases depending on the industry, it is a legal requirement. Stakeholders were also urged to maintain a risk register which is a risk management tool used to record relevant details which helps the institution to identity, record and mitigate any potential risk to the organization. Stakeholders were urged that for risk management role to be effective in any organization, all staff and management should be involved in the process, check controls of the risks should be relevant and finally risk owners should take responsibilities.

To prevent the spread of Covid-19, please adhere to the following:

FEATURE

ePhyto, a timely solution for safe trade facilitation in plants, plant products and regulated articles

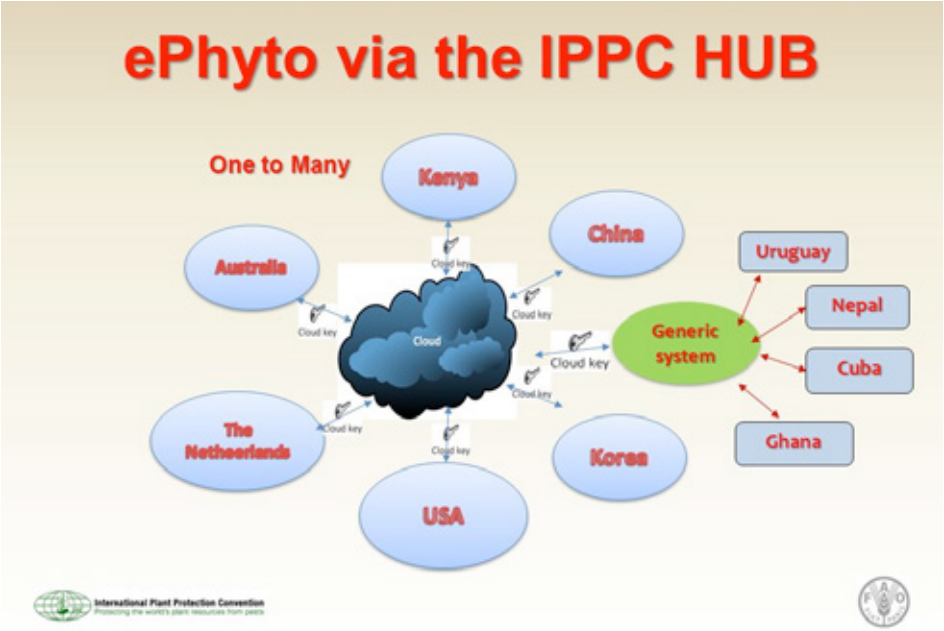
By Josiah Syanda
Phytosanitary Services Division

Movement of plants, plant products and regulated articles across international borders whether for trade, research, aesthetic, food or otherwise has potential to introduce and spread plant pests and diseases in new territories. Research has established that when organisms are introduced in new territories with favourable survival conditions and no natural enemies, they spread quickly and more often with negative economic and social impact. The Sanitary and Phytosanitary Agreement, under the World Trade Organization provides a framework for instituting measures to minimize the risk of spreading pests through trade. The SPS agreement obligates countries to put in place measures which guarantee their trading partners that consignments of plants and plant products are free from organisms harmful to plants, humans, animals and the environment. The guarantees are communicated through a phytosanitary certificate also known as a plant passport. The requirement for plant passport therefore underscores the value of a phytosanitary certificate as an important component in trade and market access. Lack of a phytosanitary certificate can lead to huge losses where consignments are denied entry into the territory of the importing country. Forgeries or alteration of certificates could be loop holes where countries loose revenues and risks introduction of pests into the importing countries' territories.

Paper phytosanitary certificate

In the current business processes, a paper phytosanitary certificate is issued by a National Plant Protection Organization of the exporting country and is transported to the importing country through various means which exposes the certificate to defacing, loss of integrity, alteration, delays, among others. These factors lead to rejection of the certificate at the destination country and consequently interception of the consignment. Over the last decade, the International Plant Protection Convention, National and Regional Plant Protection Organizations including organized trader associations have pursued innovative options to mitigate against losses incurred through phytosanitary non-compliance. Adoption of electronic phytosanitary certification (ePhyto) by trading partners is seen as the future for ensuring safe trade and efficient movement of plants, plant products and regulated articles.

The ePhyto Solution



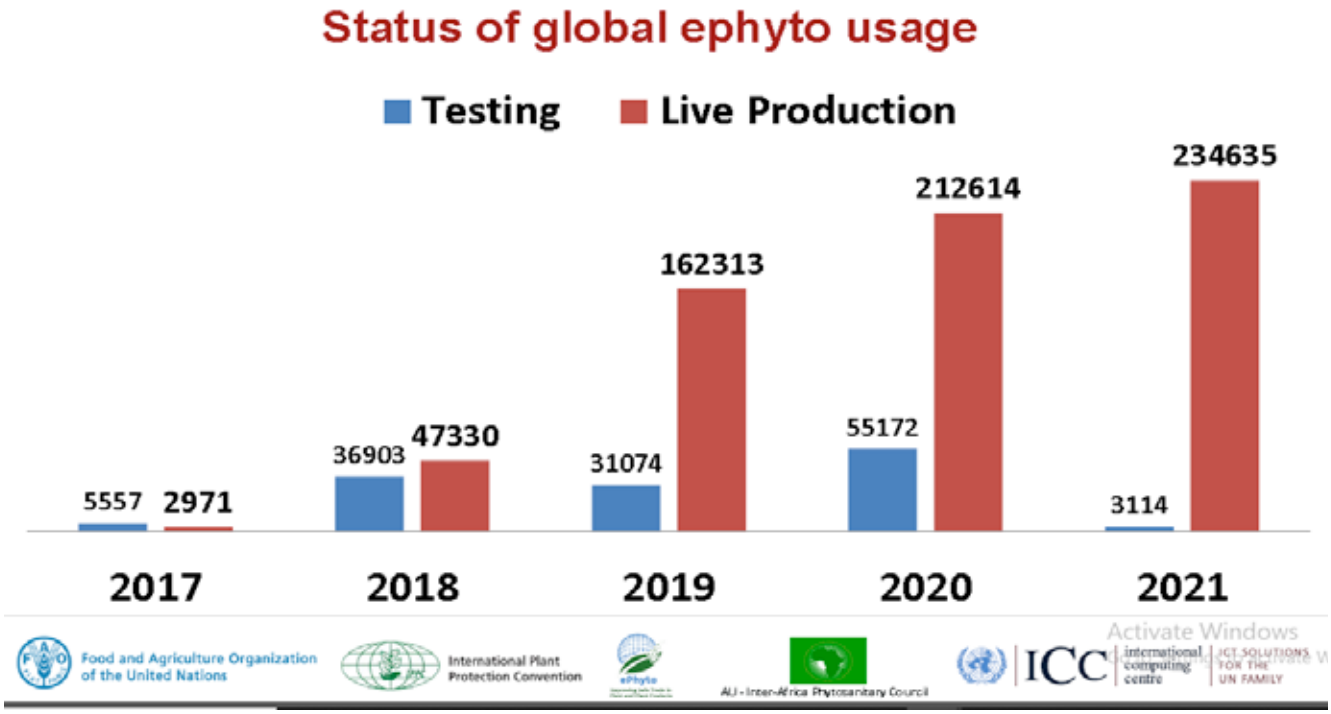
Establishment of the ePhyto solution began in early 2000 when countries began to develop electronic certification in order to improve efficiency and facilitate trade. In 2011, the Open-Ended Working Group (OEWG) began work towards harmonization of certification and data codes. In April 2014, Appendix I of ISPM 12, which provides guidelines on format and contents of ePhytos, mechanism for exchange, harmonized codes and schema to be used in the certificate, was adopted. In 2014, the Commission of Phytosanitary Measures (CPM) commissioned a study (Bryant-Christie) which concluded that a hub to exchange certificates would further benefit adoption. An ePhyto Steering Group was formed with a responsibility to work on ephyto hub and a generic system to assist countries without national electronic certification systems.

In 2017, the ePhyto hub, an electronic phytosanitary certificates exchange platform was launched. Countries with National electronic Certification Systems can now connect to the hub and share paperless certificates. Countries without National Systems have the option of adopting the Generic Electronic National Systems (GeNS) to exchange certificates through the Hub.

Electronic phytosanitary Certificate

KEPHIS has been in the forefront in championing adoption of ePhyto solution for safe trade facilitation, reduction of cost of doing business and efficient service delivery. Currently, Kenya is doing both paper and ephyto certificates to The Netherlands and through the ePhyto Hub.

The COVID – 19 pandemic has laid bare the importance of ePhyto in trade facilitation where physical contact has to be minimal. NPPOs and trading communities have had to rely on scanned copies of phytosanitary certificates and emails to persuade receiving parties to accept the copied documents for consignment clearance. Ephyto solution offers exchange of original phytosanitary certificates data in secure electronic format and delivery to the National Plant Protection Organization without an intermediary thus enhancing trade and management of phytosanitary risk.



Number of ePhyto exchanged on ePhyto hub 2017 – March 2021

KEPHIS Board at KALRO Thika to access NPT Trials of Bt Maize

Dr James Karanja(left) of KALRO with KEPHIS Board Chairman Mr. Robin Achoki(right) Director Dr. Rose Njeru (2nd right) Head of Seed Certification and Plant Variety Protection Simon Maina (3rd right) when they visited KALRO Thika to access Bt maize crops under National Performance Trials

Some KEPHIS Board members visited the Kenya Agricultural and Livestock Research Organization(KALRO) in Thika where they assessed ongoing National Performance Trials(NPTs) for Bt Maize. In this trial, the maize is being tested for stem borer resistance; the pest causes extreme damage to maize leading to massive losses to farmers. The Board was shown rows of maize grown under conventional conditions and other rows with the gene inserted to mitigate against the stem borer for comparison. The data will be analyzed and presented to the National Performance Trials Committee.

The visit was a follow up to the Biosafety Risk Assessment and Genome Editing Technologies capacity building workshop held a few months ago in Nairobi. The workshop was important to KEPHIS and NBA board members as key policy decisions on biosafety matters in Kenya fall on them.

Some KEPHIS Board members and management together with staff of the Kenya Agricultural and Livestock Research Organization, Thika in front of the Bt Maize trial at KALRO Thika

Other sites where Bt Maize is undergoing NPTs include Embu, Mwea, Kibos, Kakamega, Alupe and Distinctness, Uniformity and Stability(DUS) tests at Kiboko. The purpose of NPTs to test new plant varieties for performance compared to varieties currently in the market.

Nyandarua Youth Trained On Production Of Potato Tissue Culture, Apical/Stem Cuttings Mini Tubers, Basic And Certified Seed

By Maureen Mwangangi
Plant Quanrantine and Biosecurity Station, Muguga

KEPHIS trained women and youth groups in Nyandarua County on production of Potato Tissue Culture, Apical/Stem Cuttings Mini Tubers, Basic and Certified Seed. The activity was in line with the President's *Big Four Agenda* pillar of Nutrition and Food Security. The participants were drawn from Oljoro Orok, Ndaragua and Ol Kalou sub counties. Majority of the farmers grow Irish potato and had expressed interest in the production of certified potato seed. They were derived from four groups namely, Valley potato seed breeders, Kiganjo royal youth group, Penem limited and Gachuiri United self help group.

The training was part of the KEPHIS Performance Contract(2020-2021) to train and build capacity for youth and women in modern agriculture. The groups were taken through an overview of KEPHIS services, production of tissue culture, stem/apical cuttings and minitubers, common pests and diseases in Irish potato production and seed certification process.

RM Nakuru Mr Geoffrey Malemba taking youth and women through a training on Potato Tissue Culture, Apical/Stem Cuttings Mini Tubers, Basic And Certified Seed in Nyandarua County

KEPHIS has been working with stakeholders (private and public) to transfer 3G technologies to support increased production of potato basic seed. A training module was developed on December 2020 that would be used to train farmers on these technologies. KEPHIS - Plant Quarantine and Biosecurity Station at Muguga is also establishing an aeroponics and hydroponics facility at the station for minituber production. The facility is envisaged to be a training hub for technology transfer and capacity building of stakeholders interested in adopting such systems. This will be through demonstration on the how the technology works as well as sensitization on the best practices and exploring the opportunities in the value chain for them to venture in. This will contribute greatly towards supporting increased availability of clean starter material for use in further multiplication by seed producers to increase the availability of certified seed in the country.

The Principal of the Agricultural Training Centre at Oljoro Orok mentioned that the County selected the centre as an Irish potato seed bulking site. The centre is responsible for promoting agribusiness and setting up models of farming for training.

Production of clean irish potato seed through tissue culture and apical/stem cutting technologies

The participants were taken through introductions on basic knowledge and applications of tissue culture in the production of clean starter material for irish seed production; production of apical and stem cuttings to produce minitubers, their differences and role in increasing seed production was explained, qualities of selecting a good quality apical cutting were listed and the advantages and disadvanatges of using these technologies were explained.

Participants were shown how apical cuts are prepared and planted on a tray. Further, planting of the apical cuttings to produce minitubers in the greenhouse, field or aeroponic system was explained.


Participants visit at the ATC greenhouse for the demonstration of apical cut production

Potato pest and diseases identification

Common pests and diseases of Irish potato production are Bacterial Wilt, Blackleg, Potato Cyst Nematode, Common scab, Late blight and viruses. Some quarantine pests of concern include Potato ring rot, Pink rot, Root knot nematodes and potato canker. Integrated Pest Management (IPM) strategies were given for managing and control of diseases i.e use of tolerant varieties, planting certified seed, scouting and rouging out, controlling weeds, chemical spray and crop rotation.

FEATURE

The Importance of Nursery certification

By Pamela Kibwage
Phytosanitary Services Division

A plant nursery is a place where any kinds of plants are grown with the aim of being moved or transplanted later. It can occupy a field, garden, greenhouse or another form of growing space; certification is the process of inspecting and auditing the nursery premises to ensure the plants produced are pest free and are of high quality.

It is also the official process through which the nursery process and plants are inspected to ensure seedlings produced are free of pests, high quality and true to type. A certificate is issued as evidence of compliance to the set laws and regulations.

The Beginnng

Generally, the source of certified high quality seedlings of horticultural plants (fruits, vegetables, herbs, ornamentals) and forest trees was Kenya Prisons farms located country wide. Later KARLO and KEFRI started producing specific fruit tree and forest tree seedlings according to their research programs.

Tissue Culture Banana nursery

Certification was mainly focused on the Prison Department nurseries due to the large number of seedlings produced and distributed countrywide. The private nurseries were not undergoing registration and certification due to their small size and limited distribution network hence posing low risk in terms of spread of pests and disease.

Small private nurseries started in the late 1990s and were generally found in areas of specific crop production for example ornamentals (flowers, shrubs and trees) in urban areas; fruit trees in areas of production and forest trees in rural areas due to promotion of agroforestry. Vegetable seedlings were mostly produced by small roadside nurseries in urban areas and vegetable production areas.

With the growth of the horticulture industry, private nurseries have increased in number and size and their distribution is countrywide. To ensure the production and distribution of clean seedlings certification is mandatory for all nurseries.

Question: Why is seedling certification necessary?

A plant nursery is a managed site designed to produce healthy vigorous seedlings under favourable conditions until they are ready for planting or sale. Young plants, whether propagated from seed or vegetative, require a lot of care particularly during the early stages of growth. They have to be protected from adverse temperatures, heavy rains, drought, wind and a variety of pests and diseases. The nursery ensures better germination and establishment and also ensures saving of time, area and labour and makes easy maintenance.

What are the advantages of growing seedlings in a nursery

1. **Intensive care** - seedlings receive better care and protection (from weeds and pests) in the nursery.
2. **Reduction of costs** - fewer seeds are used for raising seedlings in the nursery than for sowing directly in the field, because in the latter seedlings have to be thinned to one which is wasteful. Pesticides and labour are also reduced under nursery conditions as compared to planting directly in the field.
3. **Opportunity for selection** - raising seedlings in a nursery affords the grower an opportunity to select well grown, vigorous, uniform and disease free seedlings.
4. **Extend a short growing season for late maturing crops** - seedlings can be raised in a nursery under a protected environment before conditions outside become suitable for growth and transplanted into the field when conditions allow, thus reducing the amount of time spent in the field.

FEATURE

The Importance of Nursery certification

1. Classification of Nurseries

Nurseries are classified according to the type of seedlings produced:

1. Fruit tree nurseries - In this nursery, seedlings of fruit crops are propagated.
2. Vegetable nurseries - Produces seedlings like cabbage, tomatoes and onions.
3. Flowers plants nurseries -The seedlings of ornamental flowering plants and shrubs.
4. Forest tree nurseries -The seedlings of forest trees like Eucalyptus, Cyprus, Grevillea.
5. Miscellaneous nurseries – Here, seedlings of plants with great economic value, rare and medicinal and herbal plants are propagated.

2. Types of nursery facilities

There are three main facilities normally used for raising seedlings in a nursery. The choice of a particular one will depend on the available resources and prevailing environmental conditions.

1. Greenhouses - environment fully controlled
2. Net house - environment partially modified
3. Open field - where climatic conditions are normally favourable for the crops grown.

3. Legislation and regulations related to seedling production

In Kenya, production and sale of plant seedlings is regulated through various laws and regulations;

Laws - Plant Protection Act CAP 324, Seeds and Varieties Act CAP 326, Agriculture Food Authority Act, Crops Act (2013) and Pest Control Products Board Act Cap 346.

Regulations - the Horticulture Crops Regulations (2019)

Coffee nursery inspection

4. Who can be certified?

According to the law, all nurseries producing seedlings for distribution and/or sale should be certified to ensure production of clean seedlings of high quality, true to type and free of pest and diseases.

5. Which nurseries is KEPHIS currently certifying? Is there a charge for inspection and certification?

KEPHIS conducts certification of all types of nurseries: fruit tree, ornamental, vegetable, herbs and forest tree. The charges for inspection and certifications are Ksh. 7,000; if laboratory analysis is required, it will be charged separately.

6. What is the process of certification?

The nursery certification process starts with registration of the nursery by the Agriculture and Food Authority - Horticulture Crops Directorate (AFA-HCD). There are requirements a nursery has to meet prior to registration. KEPHIS will only certify registered nurseries.

Certification starts with the inspection of the nursery. The nursery operator will request for certification from KEPHIS and the nearest KEPHIS office will carry out the certification. A KEPHIS inspector will visit the nursery and inspect the processes carried out in the production/propagation of the seedlings. Areas that are of concern are operator knowledge and skills in seedling production, pest and disease prevention and management, source of propagation material (seeds, scions, buds, etc), sanitation and hygiene, structures in place, quality of the seedlings and record keeping.

Vegetable seedling nursery

7. How many nurseries has KEPHIS certified currently?

Currently, about 250 nurseries are certified countrywide. These are mainly fruit tree and vegetable seedling nurseries.

8. Are nurseries able to sustain someone who ventures into them wholeheartedly and aid in self-employment?

Nursery business is sustainable depending on the target market and distribution market. It is important that prior to starting a nursery a market survey is carried out to gather information on the required seedlings types and the demand. Start small and expand with time. Once the nursery is known for production of high quality seedlings, the demand is there.

KEPHIS Inspector Pamela Kibwage(right) inspecting a nursery

PRESS RELEASE

SOUTH KOREA MARKET READY FOR KENYA'S BROCCOLI AND UNRIPE BANANAS

Nairobi Kenya, in May 2015 initiated a bilateral agreement with a view of accessing the Republic of South Korea market for various products from Kenya. The Republic of South Korea, through the Kenyan Embassy in Seoul, response of January 2016 indicated that unripe Banana and Broccoli were exempted from Pest Risk Analysis (PRA), however they required to be accompanied by a phytosanitary (plant health) certificate. This indicates that Kenya is free to export unripe Banana and Broccoli as long as they get a phytosanitary certificate which is issued by KEPHIS.

Apart from market access for unripe banana and broccoli, Kenya exports other agricultural commodities to the Republic of South Korea. These include:

- Cut flowers such as Roses, Gypsophilla, Freesia, Calla Lillies, Limonium, Solidago, Carnations, Zantedechia, Hydrangea, Lavender and Craspedia; Propagation materials such as Dianthus caryophyllus, Aster spp, Euphorbia spp, Fuschia hybrida, Kalanchoe Poinsettia spp and Chrysanthemum
- Coffee, dried chillies, Gum Myrrh and Tea

Kenya continues to engage the Republic of South Korea on the export of more products. These include Avocadoes, Passion fruits, Baby carrots, Baby corn, Sugar snaps/Snow peas, Karella and Pineapples.

Requirements for certification and issuance of phytosanitary certificates

1. Exporters interested should be registered by Horticulture Crops Directorate as an exporter of horticultural products.
2. The client should register with KEPHIS by submitting statutory documents to be issued with credentials for accessing the Electronic Certification System (ECS) in order to make electronic applications for inspection and issuance of phytosanitary certificates. Phytosanitary certificates are issued upon inspection and confirming that the bananas are free from pests and pest damage and meet quality requirements.
3. Other quality requirements that should be met include the following; ensure the banana are unripe, free from damage and practically free of any visible foreign matter.

KEPHIS therefore wishes to encourage the youth, women and farmers to increase volumes of unripe banana and broccoli to South Korea as the market for these commodities is open.

KEPHIS NEWS is published by Kenya Plant health Services (KEPHIS)

Chief Editor:
Professor Theophilus M. Mutui PHD

Writers:
Joseph Kigamwa
Irene Maina
Josiah Syanda
Maureen Mwangangi
Pamela Kibwage
Catherine Muraguri

KEPHIS Countrywide Offices:
Nairobi (Headquarters) | Plant Quarantine and Biosecurity Station, Muguga |
Plant Inspection Unit- Jomo Kenyatta International Airport | Mombasa | Nakuru | Kitale |
Kisumu | Embu | Naivasha | Eldoret Airport | Malaba Boarder office | Busia Border office |
Isebania Border office | Namanga Borderoffice | Loitoktok Border office |
Taveta Border office | Lungalunga Border office | Moyale Border office | Suam Border office |
Lwakhakha Border office | Bura office | Timau office

For more information, please contact:
The Managing Director, KEPHIS
director@kephis.org | 0709 891 000

www.kephis.org