



PLANT HEALTH EXPERTS CONVERGE TO DISCUSS PLANT HEALTH ISSUES AT THE 2ND PHYTOSANITARY CONFERENCE

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KEPHIS MD.Dr. Esther Kimani (left) taking Uasin Gishu County Governor Hon. Jackson Mandago and other delegates through some of the KEPHIS services at the 2nd Phytosanitary Conference exhibition

KEPHIS Headquarters, Nairobi - One hundred plant health experts from the International Plant Protection Convention (IPPC), private and public institutions, academia, students, researchers, exporters and farmer organizations, international and donor agencies from the Eastern Africa Community and COMESA attended the 2nd Phytosanitary Conference at KEPHIS early June. The event, held in conjunction with the Centre of Phytosanitary Excellence (COPE), USAID

through Feed the Future Project, the Centre of Biosciences International (CABI) was geared towards creating opportunities for participants from National Plant Protection Organizations (NPPOs) and those in agricultural trade to share their achievements and challenges, create linkages and promote market access in Africa as well as identify potential areas of cooperation and phytosanitary regulations at regional and international levels.



Severe infestations by Papaya mealy bugs (*paracoccus marginatus*) observed during surveillance in Kwale, Mombasa, Kilifi and Taita Taveta counties. The 2018 Phytosanitary Conference discussed pests and diseases affecting trade and agricultural production

The week-long forum whose theme was Phytosanitary Systems for Safe Trade and Food Security was officially opened by Uasin Gishu Governor H.E. Jackson Mandago who reiterated that there is need to put more effort in crops and plants research to facilitate trade as Africa, promote food production and eradicate hunger since there is sufficient market for agricultural produce.

KEPHIS MD Dr. Ether Kimani reiterated the important work that KEPHIS hence the need for more funding. "Because of the nature of work we do as KEPHIS we request the national government to fund us more since we are facilitating business and more specifically agriculture," she stated.

Through posters and oral presentations, speakers addressed key thematic areas affecting plant health such as pest surveillance, pest diagnostics, export controls, industry participation, import control and quarantine regulations, technologies and innovation in phytosanitary systems. Food safety issues in phytosanitary issues were also discussed such as Maximum Residue Limits(MRLs), heavy metals and Aflatoxins)as well as cross-cutting issues in

phytosanitary systems including legal requirements, communication in phytosanitary systems, genetically modified organisms, biosafety and emerging phytosanitary issues e.g. new pests. Moreover, a practical field day was held to see the application of these issues in the conference themes.

An exhibition to showcase practical demonstrations of the thematic areas was also set up where various agricultural institutions such as CABI, COPE, Farm Track, Vegpro, Simlaw Seeds, Kenya Seed Company and the hosts KEPHIS displayed their products and services.

The youth(ages 18-35), farmers and seed sellers from various counties were also not left out as side events were held specifically to enhance their knowlwge and skills in phytosanitary systems.

The conference came at a time when plant health is at higher risk in Kenya and Africa at large owing to the Fall Army Worm which has greatly affected East Africa's staple, maize while the False Coddling Moth affecting roses which are a key export to overseas markets.



Fall army worm (*Spodoptera frugiperda*) infestation in maize. The pest is affecting maize in Kenya and many other sub-Saharan countries

PICTORIALS OF THE 2ND PHYTOSANITARY CONFERENCE



1. Participants at the 2nd Phytosanitary Conference follow proceedings



2. A group photo of the 2nd Phytosanitary Conference participants that brought together over 100 participants from countries in Kenya and beyond



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3. From right: Uasin Gishu Governor Jackson Mandago(2nd right), Deputy Chair of the Parliamentary Committee of Agriculture Dr. Daniel Tuitoek, KEPHIS MD Dr. Esther Kimani, USAID Mission Director to Kenya and East Africa Ms. Lisa Dooley-Jones and Professor Anne Muigai who represented the Chair of the KEPHIS Board of Directors at the CABI Exhibition stand

4. From left: Ms. Teresiah Muchira, Member, KEPHIS Board of Directors, Eng Khamis Chome Abdi, member KEPHIS Board of Directors, Dr Esther Kimani, KEPHIS MD, Dr. Daniel Tuitoek, Vice Chair of the Parliamentary Committee on Agriculture, Uasin Gishu Governor, H.E. Jackson Mandago, Prof. Ann Muigai, Member, KEPHIS Board of Directors.....

5. Participants at a field visit during the conference.

SEED STOCKISTS IN NYANDARUA COUNTY LEARN ABOUT SEED PRODUCTION AND HANDLING PRACTICES



Mary Wanjiku displays potato seedlings and tubers propagated from rooted apical cutting technology during a potato training event at the Wambugu Agricultural Training Centre in Nyeri

Nyandarua County -At least 39 seed stockists in Nyandarua County have been trained on the importance of good seed production and handling as a starting point to enhanced crops production. The KEPHIS Nakuru Regional office also trained the stockists on quality assurance in seed trade. Also present at the training were farmers, seed merchants representatives and facilitators drawn from KEPHIS and the Nakuru County Government Department of Agriculture. The training aimed at educating the stockists on the importance of registration of seed growers and sellers as well as imparting knowledge on seed quality assurance standards. KEPHIS equipped the trainees on the right information pertaining to seed, putting more emphasis on the basics of seed quality assurance to ensure that seeds are free from pests and diseases, registration of seed growers, small cereals seed production and certification, seed procurement, handling, selling, quality marks and documentation, renewal of seed sellers licenses which should be acquired before seed selling and seed labeling with emphasis on the sticker labels.

The seed sellers and growers were urged to ensure that they observe seed quality standards. They were also requested to make follow ups on their customers to identify how the seeds fair in their farms and to inform relevant institutions of any complains on behalf of farmers. Speaking during the training, James Njuguna a sales representative from Kenya Seed Company (KSC) provided information on the role of seed companies in seed growing and sellers' registration, seed production, distribution and internal quality control. He stated the company has been working in collaboration with KEPHIS to ensure that required seed standards such as the use of sticker labels are met. He also advised seed sellers to transfer the information on how to use the USSD code to identify certified seeds to farmers.

SeedCo Company emphasized the importance of identifying the right seeds to obtain the right produce; at the same time the company urged seed growers and sellers to be proactive to obtain information on new farming practices since extension officers may not be able to reach to each farmer. On the way forward, KEPHIS Nakuru Regional Manager Kepha Oganda insisted that license renewals should be done at the beginning of the year; also seed growers/ sellers at the meeting should be ambassadors and educate farmers on good farming practices while ensuring that the quality of agri-inputs is maintained. "In case of any issues in seed trade, communication should be done to KEPHIS using

KEPHIS TRAINS HORTICULTURAL EXPORTERS ON MANAGEMENT OF PESTS ON ROSES

Nanyuki - KEPHIS conducted a training on pest management in Nanyuki, Laikipia County where attendants were sensitized on the importance of managing pests and diseases to assure quality of plant exports leading to enhanced revenues. At a forum attended by approximately 100 exporters representatives from Meru and Laikipia Counties as well as stakeholders from the Agriculture and Food Authority Horticultural Crops Directorate - Nyeri, Ministry of Agriculture - Buuri Sub-County, Nyeri Directorate of Agriculture and Laikipia CDA representatives, knowledge on emerging pests and their management, practical identification of the pests and biological diagnostics and requirements of the new Australian market were discussed.

The training began by giving an overview of the floriculture industry in Meru and Laikipia Counties where various challenges experienced by farmers in Timau were highlighted. "There is inadequate infrastructure, hence the need to have a cooling system for out-growers in the region; farmers also experience low production due to lack of knowledge, low market access, dependency on rain and post-harvest losses which result to up to 25% losses," stated Mr. John Gichuki, the Laikipia County Agriculture Officer.

The trainees were also taken through the process of rejections and notifications at Kenya's main exit point - Jomo Kenyatta International Airport (JKIA) -to enable them appreciate the importance of systems approach to ensure compliance to market requirements among horticultural exporters,

technical/production managers, supervisors and scouts on quality aspects of flowers, vegetables, fruits and other exported horticultural produce.

"Ensure that you put in place Integrated Pest Management (IPM) systems for pest management, establish clean production systems and ensure proper use of chemicals and crop pests management combination to avoid interceptions at the export and local market," emphasized Mr. Dominic Mwenda, a KEPHIS inspector.

Additionally, the trainees were taken through the biological identification, scouting, pest reporting and management of the False Coddling Moth (FCM) and the Fall Armyworm (FAW) in roses to avoid loss of revenue to the companies and foreign exchange for Kenya; trade restrictions, increased costs incurred during business such as follow-up audits, enhanced sampling at the points of exit, trade restrictions, loss of confidence for Kenyan produce and trade bans. Ms. Pamela Kibwage, also of KEPHIS, added that FCM has been added to the list of quarantine pests in all products and therefore, exporters were encouraged to develop effective systems approaches to the management of the pest and also understand the requirements of the target market.

Moreover, they were also taken through proper use of pesticides and safe disposal of empty pesticide containers. The trainees were urged to liaise with the National Environmental Management Authority (NEMA) on the disposal of such containers.

The training was conducted through the ongoing FOODSCAP program.

PESTICIDE RESIDUE AND AFLATOXIN MONITORING PROGRAM

KEPHIS, through the FOODSCAP project, conducted its 2017/2018 pesticide residue monitoring program in different regions of the country as part of its 3rd quarter targets for the year. The program covered Machakos, Makueni, Kitui, Kirinyaga, Nyeri, Murang'a, the North Rift region, among others. KEPHIS implemented the National Monitoring Programs for pesticide residue, the main focus being on both export and locally consumed horticultural produce including beans and peas with pods, tomatoes, kales, avocados, mangoes, passion fruits and spinach.

KEPHIS, through its Analytical Chemistry Laboratory, has established service laboratories to monitor the quality and levels of toxic residues in agro-inputs such as irrigation water and soil and fresh produce which is a measure to improve compliance with Maximum Residue Limits (MRLs) of both exports to the key European Union (EU) market and produce for local consumption at production and collection sheds. In addition, the program has been conducted to build a database for MRLs compliance as one of the measures to implement food safety surveillance monitoring program for Kenya. These programs are also geared towards training farmers on safety measures; for instance, the type of pesticides to use and quantity and also ensure that the chemicals farmers and growers use are not expired since they could be poisonous or non-effective.





Top and above: Sampling French beans in a farm at Isinya-Kajiado County

In addition to carrying out pesticide residue analysis to ensure safe trade and food safety through checking food contaminants, KEPHIS also monitors cereal produce which includes maize, sorghum, millet and green grams at farm level during and after harvest and extends this to the selling outlets such as cereal shops and open air/ municipal markets.

"KEPHIS implemented the National Monitoring Programs for pesticide residue, the main focus being on both export and locally consumed horticultural produce including beans and peas with pods, tomatoes, kales, avocados, mangoes, passion fruits and spinach."

KEPHIS TRAINS THE HORTICULTURE INDUSTRY ON PESTICIDE APPLICATION

KEPHIS Headquarters and Naivasha-Agronomists, technical assistants, sprayers, technical managers and consultants in the horticulture industry underwent trainings to enhance their skills and knowledge on the use of registered pesticides, the right dosage application and picking produce after the pre-harvest interval (PHI) and compliance regulations. In a three day training organized by KEPHIS, the staff were taken through theory, presentations, examinations and field demonstrations.

The forum began by a presentation on phytosanitary (plant health) market requirements and scouting for pests and diseases in beans and peas in pods. Pests and diseases of economic importance to beans and peas in pods were also discussed as controlling and managing the pests as well as diseases leads to good quality produce and high yields.



KEPHIS inspectors during a pesticide application training in Naivasha preparing to demonstrate to trainees various methods of pesticide application on horticultural produce



In addition, pesticide use patterns, data chemistry metabolism in farm animals and crops, methods of pesticide residue analysis and process studies were also discussed. The training was geared towards ensuring that foods meant for local consumption and export meet the Maximum Residue Levels (MRLs) levels, hence ensuring food safety. Horticulture was highlighted as a major foreign exchange earner for the Kenya, with the European Union (EU) being the largest market for both beans and peas with pods. Stringent requirements to the EU have however posed several challenges to exporters and producers, for instance, not adhering to requirements has led to restrictions to market access for some crops, hence loss of income and loss of jobs. In order to adhere to market requirements and avert increased controls, Kenya through the Horticultural Competent Authority Structure introduced measures such as routine/regular checks on status of exporters, establishment of food safety systems, the suspension of non-compliant companies, risk profiling of companies, implementation of an enhanced pesticide residue monitoring plan and conducting food safety audits for any Rapid Alert System for Food and Feed (RASFF), positive detections greater than 50% of EU MRLs established from routine sampling program and for any new exporter applying Export Certification System (ECS) account for beans and peas with pods.

"Effective control is a function of three factors; right pesticide, proper rate of application on target and right time of application. It is also crucial to uniformly apply the correct rate of pesticide over the target and this can be assured by looking at the nozzle, droplet size, swath, operator speed, flow rate and nozzle spray pattern," stated Onesmus Mwaniki, the Head of the KEPHIS Analytical Chemistry Laboratory.



Trainees being shown how to use a track sprayer for pesticide application

KEPHIS SET TO ESTABLISH SIX PLANT CLINICS COUNTRY WIDE



Plant health doctors from various KEPHIS regional offices during the training for plant doctors conducted at KEPHIS headquarters prior to the establishment of plant clinics

KEPHIS in conjunction with the Centre of Agriculture & Biosciences International (CABI-Plant- Wise Project) through the Feed the Future Program under the ongoing FOODSCAP Project conducted a plant doctors training aimed at enhancing knowledge and technology transfer to farmers thus promoting food availability. The institutions committed to establish six(6) plant clinics countrywide which are intended to provide plant diagnostic services and information on plant pests and diseases. During the week long training held at KEPHIS headquarters, plant doctors were urged to roll out the program

in their respective regions. The training focused on describing symptoms of the major pathogens and pest groups, relating the symptoms to their causes, advertising and running the plant clinics, filling in the plant clinic prescription and record sheets as well as appreciating the concept of plant health systems.

The training was conducted in two modules, whereby the first module focused on symptoms of pests and diseases, field and laboratory comparison, introducing the knowledge bank, causes of plant health problems, being a plant detective, common symptoms and causes, mineral nutrition of plants, field diagnosis of mineral deficiencies, collecting samples, symptoms in context, managing plant clinics, learning from interviews and filling in the plant-wise record sheet. The second module looked into topics such as plant disease photography, spatial aspect control, introduction to chemical

control, limitations of chemical control, non-chemical management, safe use of pesticides, using the knowledge bank, challenges of plant doctors, among others.

It was also discussed that successful operations of plant clinics require consistency and commitment and that collaboration with county governments is crucial for the clinics to meet the intended objectives.

Speaking while officially closing the training, KEPHIS MD Dr. Esther Kimani acknowledged the collaboration KEPHIS has had with CABI; she encouraged the trained plant doctors to implement what they have learnt and train other plant doctors in their respective regions.



Some of the diseases and pests that affect plants. Plant clinics will provide advice and prescriptions on how to manage the Maize Lethal Necrosis Disease (MLND) as well as the Fall Army Worm, a pest which has led to poor maize production in many parts of Kenya

INSPECTORS, YOUTH AND NURSERY OPERATORS LEARN SKILLS ON NURSERY ESTABLISHMENT AND MANAGEMENT

THIKA - KEPHIS, through the FOODSCAP Feed the Future Project, conducted a three day training on nursery establishment and management held at the Kenya Agricultural and Livestock Research Organization (KALRO) Thika station. In a forum attended by plant inspectors, youth nursery operators from Meru, Machakos and Uasin Gishu counties, nursery establishment, management and grafting were among the key topics that were discussed. Other organizations such as Horticultural Crops Directorate (HCD), World Agroforestry Centre (ICRAF) and Jomo Kenyatta University of Agriculture and Technology (JKUAT) were also present.

Speaking while officially opening the forum, KALRO Thika centre director Dr. Jesca Mbaka said that establishing nurseries is important as it is the basis of fruit production and emphasised the need for nursery operators to be keen on plant health issues to prevent the spread of pests and diseases and obtain certification.

"I am impressed by the willingness of young people to sit, discuss and learn about agricultural issues and more specifically to see the interest in learning about nursery management practices. Nurseries are the basis of food production in the country and therefore nursery operators need to be very keen on plant health issues to prevent spread of pests and diseases which is a threat to food security," she stated.



KALRO Thika fruit tree nurseries

The training commenced with a theoretical session which was followed by a practical field session where participants toured the KALRO tree nurseries where demonstrations were carried out on grafting of avocado, mango and macadamia fruit trees.

Trainees were also taken through establishment and management of seedling nurseries where they have learnt about seed bed preparation requirements such as soil/media suitability putting into consideration the soil drainage, structure, depth and organic matter content and selecting spacing or plant density that will enhance germination of good and healthy plants. On management of the seed bed, trainees were urged to protect seedlings against drying, hot and cold temperatures by ensuring that there is proper shading/mulching, sufficient water supply through sprinkling the seedbed to curb risks of wilting as well as weeding. They

were also encouraged to practise proper seedling handling and transplanting in relation to the size of the seedlings, fragility, nutrient content and overcrowding, failure to which damage will occur on soft stem tissues.

Trainees were advised on embracing various methods of plant propagation such as asexual or vegetative propagation which include division and separation, stooling, cuttings and layering, micro-propagation for example tissue culture and macro propagation which involves the use of whole suckers and use of large pieces of parent plants.

Demonstrations on various grafting methods were conducted to the mother blocks where trainees took part in grafting avocado, macadamia and mango seedlings. At the orchards, they were able to identify different fruit varieties and pick scions for grafting. They were able to differentiate on grafting techniques among them wedge grafting, splice or whip grafting, side wedge, top-working or bark grafting, approach grafting, bridge and T-budding.

Nurseries have been viewed as a source of direct income, employment as well as possessing aesthetic and health values therefore, youth are being advised to venture into nursery business since it pays and there is demand for its accessibility.

"I urge all youth to embrace nurseries as a business since I have practised it and I have never regretted since it pays well and there is huge demand for its accessibility," said Mr. Peter Gicheru, a retired KARLO employee.



Attendees of the nursery management training during a tour to the KALRO nurseries learning on how to graft mangoes, avodoes and macadamia using different grafting methods



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In order to enhance communication with our stakeholders, customers and the public, we are happy to inform you of our phone numbers which will make it easier for you to reach and engage with us.

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KEPHIS News is published three times a year by Kenya Plant Health Inspectorate Service.

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