Sub-theme:

Import control and Quarantine Regulations

Title:

PLANT POST-ENTRY QUARANTINE REGULATIONS IN KENYA: CURRENT STATUS AND FUTURE PROSPECTS

Presented by:

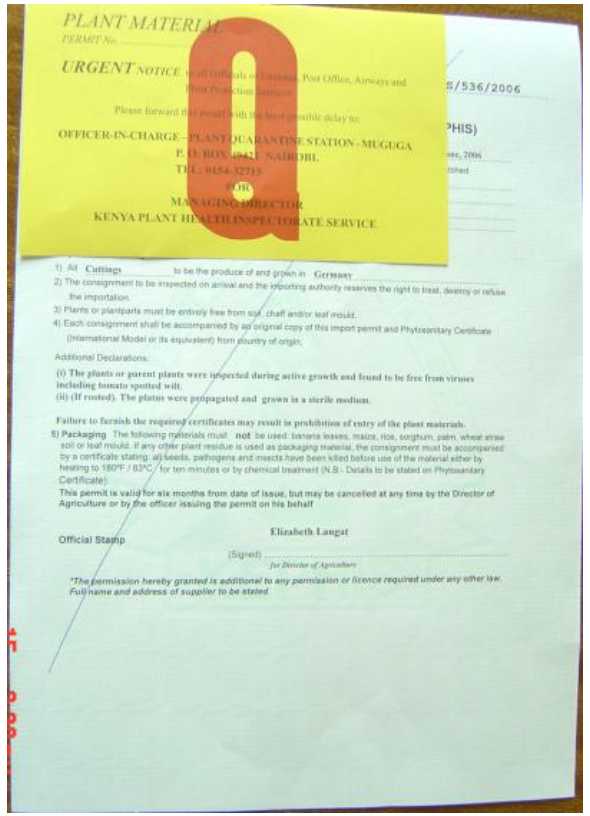
Edith Avedi

Introduction

- Trans-boundary movement of plants/plant materials provides opportunities for introduction of quarantine pests into new territories
- **Quarantine pest:** A **pest** of potential economic importance to the **area endangered** thereby and not yet present there, or present but not widely distributed and being **officially controlled** (ISPM 5)
- Examples of quarantine pests in Kenya: *Xylella fastidiosa*, *Tomato brown rugose fruit virus*, *Potato spindle tuber viroid*, *Chysanthemum stunt viroid*, *Rose rosette virus etc*

Introduction

- Through **Pest Risk Analysis**, potential risks likely to be associated with imported consignments are identified;
- ✓Commodities with **low risk** are permitted
- ✓Those with substantial risk are imported under quarantine
- ✓Those with **high risks are prohibited**
- Import conditions are documented in a Plant import register domiciled at KEPHIS



Introduction cont'

- PEQ: A facility designed to hold **imported** consignments of plants, mainly **plants for planting**, in confinement in order to verify whether or not they are infested with quarantine pests

Purpose: To contain quarantine material and associated quarantine pests for verification before release

- **A PEQ can be:**

✓ an existing PEQ station (without modifications)
✓ a modification of an existing PEQ station
✓ a new PEQ station designed and constructed
✓ quarantine in a different area or country

Introduction cont'

- The period under quarantine is depended on the commodity and associated risks
- Kenya has about 69 post entry quarantine facilities in Kenya comprising of greenhouses, open fields and laboratories
- Material held under quarantine include; plants for planting and research material
- The quarantine period allows for verification of the presence of quarantine pests

PEQ facilities

- The type of quarantine facility is influenced by the crop and the biology of the quarantine pest and its vectors
- The PEQ should be able to prevent any prevent the escape of pests associated with plants
- All PEQ facilities are inspected and approved before issuance of import permit

Role of PEQ operator

- Develop and implement technical and operational requirements at the facility (ISPM 34)
- Keep updated records
- Have access to diagnostics expert
- Report detection of a quarantine pest to the NPPO

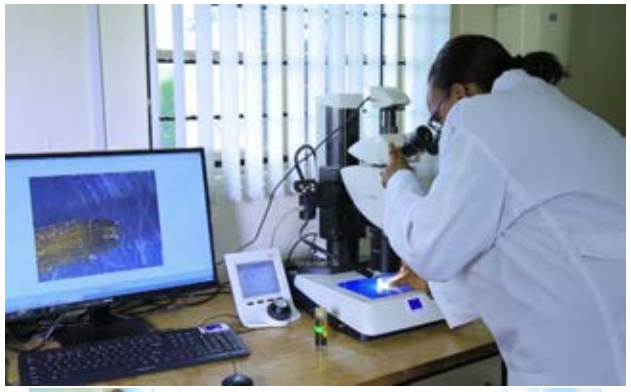
Audits by KEPHIS

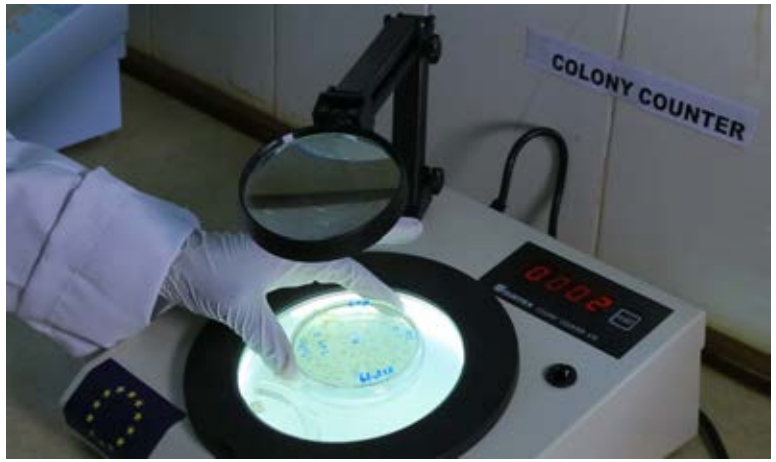
- KEPHIS conducts routine inspections to check for any infestation with quarantine pest
- Frequency of inspection depends on the material, risk and pest under quarantine
- Sampling and testing is conducted for all material under quarantine
- Approval of material is done if compliant while non compliant material is destroyed
- Completion of quarantine period is documented

Diagnostics of quarantine pests

- Development of appropriate diagnostic protocols for accurate, reliable identification
- Application of appropriate pest diagnostic techniques,
- Techniques used at KEPHIS are: microscopy, serology conventional PCRs, RT-PCR, q-PCR, DNA Barcoding

Diagnostics of quarantine pests at KEPHIS





Challenges in PEQ regulations

- Emerging pests, maintenance of quarantine and certification pathogen lists and detection protocols

- Variants/ strains resulting in complexity of identification e.g. *Bemisia tabaci* biotypes and CMV

Challenges in PEQ regulations

- Expansion of pests host range
- Visual inspection may fail to detect latent infections in some plant varieties
- Inability to determine the cause of a disease or symptoms that might be observed during quarantine inspections, especially those that are unfamiliar or unusual or for which a pathogen is not known. Should this material be released?

Future prospects in quarantine regulation

- Adopt different levels of quarantine facilities basing on associated risks
- Offshore testing and treatment of propagation material
- Develop a training curriculum for PEQ facility operators
- Adopt techniques for detecting unknown pests to enhance testing (HTS)

Future prospects in quarantine regulation

- Continuous capacity building of phytosanitary officers to enhance their skills in pest identification
- To enhance pest diagnosis at boarder points, using sensitive, reliable and cheap

Should NGS be a standard in quarantine regulation?

Advantages of NGS: Very sensitive, ability to detect pathogens in low titer, ability to detect unknown pathogens, whole genomes generated hence useful in understanding population genetics.

- **Challenges of NGS:** Bioinformatics training is key, specialized softwares for analysis

Conclusion

- We need adequate quarantine facilities
- Adoption of enhanced testing techniques
- Adequate allocation of resources
- Adoption of offshore certification for specified crops

Acknowledgements

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