NIGERIA PLANT QUARANTINE SERVICE (NPQS) / NPPO: DIAGNOSTIC ACTIVITIES, CAPACITIES AND CONSTRAINTS

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Objectives of NPQS

- To protect the country's agricultural economy from ravages and ruins of dangerous exotic plant pests through regulatory, appropriate diagnostic measures, etc.
- To ensure exportation of pest free plants and plant products through international trade by means of active application of phytosanitary measure
- NPQS as the first line of defense against introduction of plant pests.

Phytosanitary Legislation Backing Enforcement

- **International Plant Protection Convention (IPPC) of 1959 0f which Nigeria is a signatory**
- **NPQS was established in 1960 under the Agriculture (Control of importation) Act No. 28 of 1959 now newly revised as Plant Protection Bill 2004 (Draft)**
- **International Standard for Phytosanitary Measures are standards developed by IPPC and intended to harmonize phytosanitary measures applied in international trade and exchange of germplasm.**

Plant Quarantine Safeguards against Plant pests

- Specific Prohibition
- Import Permission with specified condtions
- Phytosanitary Certification
- Inspection and Treatment at Pre-Entry stations
- Post-Entry Quarantine Analysis
- Appropriate Diagnostic Measures

NPQS Role in Food Security And Sustainable Agriculture

- NPQS as first line of defence against plant pest
- Support plant export trade
- Phytosanitary measure and germplasm conservation
- Plant Quarantine clearance for Bio-control programme
- Seed health testing as a defence against the spread of seed borne diseases
- Appropriate diagnostic measures at Pre and Post-Entry stations

NPQS POST-ENTRY STATION: Diagnostic Activities Employed Include:

- A. LABORATORY TESTING & ANALYSIS

* Import * Export
* Entomology * Nematology
* General Research & Biotechnology

- B.GLASS HOUSE AND SCREEN HOUSE OBERSERVATIONS
- C. PHYTOTRON (AS STANDBY FOR VERY HIGH RISK PESTS / PLANTS

DIAGNOSTIC ACTIVITIES AT IMORT & EXPORT LABORATORIES
SEED HEALTH TESTING METHODS

- **Dry Seed Inspection**
- **Washing & Water drop**
- **Incubation Methods – Blotter & Agar Tests**
- **Embryo Count**
- **Stereo & Compound Microscope Examinations**

DIAGNOSTIC ACTIVITIES AT GENERAL RESEARCH LABORATORY & BIOTECHNOLOGY (TISSUE CULTURE)

- Coordinates All Technical / Diagnostic Activities of other Laboratories
- Research for Confirmation of Intercepted Pests
- Use of Sensitive Diagnostic Methods and Facilities
- Seed Health Testing

GENERAL RESEARCH LAB ACTIVITIES CONT'D

- **Isolation & Culturing of Intercepted Pest**

  *** Fungi & Bacteria**

  ***Identification by structural morphology: fungi, bacteria & nematode**
- **Staining & Chemical Application**
- **Symptomatology and Hypersensitivity Tests to Confirm the Pathogen – Koch's Postulate**

GENERAL RESEARCH LAB. ACTIVITIES CONT'D

- VIRUS INDEXING - Bioassay
- Growing on Test in Glass houses
- Seedling Symptoms Expression
- Pathogenicity Tests
- Seed / Plant Extract Tests
- Serological Assay – Elisa.
- Agar / gel diffusion

BIOTECHNOLOGY
(TISSUE CULTURE)

- ELIMINATION OF VIRUS FROM INFECTED PLANTS
- Direct Meristem Culture
- Heat Therapy Prior Tissue Culturing
- Mass & Micro Propagation of Disease-Free Plants
- CROPS WITH STANDARD PROTOCOLS
- *Cassava *Plantain/Banana *Potatoes

LABORATORY CAPACITY RATINGS

- TECHNICAL 70%
- HUMAN RESOURSE 70%

CONSTRAINTS

- **Inadequate Human Capacity – In Technical Areas (Pathology, Biotechnology etc.).**
- **Inadequate Diagnostic Equipment and Materials**

  *** Not locally available, hence import**

  ***Exorbitant high cost to purchase**

  ***Spare parts not always available**
- **Chemicals and Reagents**

  ***Not Always Available**

  ***Very Expensive**

  ***Always have to be Imported**

  *** Lack of Adequate Funding**

CONTRAINTS CONT'D

- **Energy: Electricity (PHNC) & Generator**

* **Cost of Disel Purchase is very High**
* **Funding – for constant supply of Disel**

- **Intensification of Publicity To Create More Awareness**

  *** About Ravages of Plant Pests on our Crops**

* **All Constraints Require Adequate Funding.**

CONCLUSION

- Support and Advocate for IPDN, West Africa Chapter
- Implore All W A-Countries to set up National Seed / Plant Health Clinics in their Countries
- Internet linkage within WA and African Region as a whole on IPDN
- IPM-CRSP to assist developing country diagnostic laboratories at least 2 to 3 per country
- Plant Quarantine Service as the first line of defense against introduction of Exotic Agricultural Pest.
- Handles all agric imports meant for research and development, improvement of indigenous crops
- Employment of Regulatory, Appropriate Diagnostic Measures etc. Lead to Positive Achievements.

- **Hence, the need for the existence pf well equipped diagnostic laboratories and high human capacities needs to handle her mandates for national and international services to prevent introduction of exotic pests and promote international agricultural trade that are pest free**

THANK YOU