

The International Plant Protection Convention

IPPC Regional Workshop 2016

Delivering Phytosanitary Diagnostic Services



Outline

- Group exercise 1
- Importance of pest diagnosis
- Identified problems of pest diagnostic systems
- CPM-11 Recommendations on the importance of pest diagnosis
- IPPC Guide to Delivering Phytosanitary Diagnostic Services
- ISPM 27 (Diagnostic protocols for regulated pests) and annexes
- Group exercise 2



Group exercise 1

- Breakout into groups of 3 to 4.
- Discuss in your group 4-5 reasons why pest diagnostics is important
- Identify which phytosanitary systems and activities depend on it (indicate ISPMs that relate to your answers where relevant).
- In plenary:
 - Group 1 reports
 - Subsequent groups report only elements and reasons that have not yet been identified.

PAUSE FOR EXERCISE!



Importance of pest diagnosis

Pest diagnosis underpins:

- Pest Risk Analysis
- Export certification
- Import verification
- Application of phytosanitary treatments
- Pest surveillance
- Eradication programs
- Pest free areas

Identified problems of plant diagnostic systems

Lack of:

- Hard infrastructure
- Financial resources
- Expertise in core scientific disciplines, the taxonomy of pests and classical diagnostic skills.

Lack of access to:

- Reference collections
- Scientific publications
- Pest databases.



CPM-11 Recommendations on the importance of pest diagnosis

- Cross-cutting: underpins most International Plant Protection Convention (IPPC) activities.
- In order to take action against a pest, it must be accurately identified.
- To enable safe trade, pest diagnosis must be conducted to a high level of confidence with a minimum of delay.



CPM-11 Recommendations on the importance of pest diagnosis

Contracting Parties to:

- Ensure there are adequate laboratory facilities and expertise to support pest diagnostic and taxonomic activities with sufficient allocation of resources.
- Share knowledge and expertise with other countries.
- Testing or publicizing examples of best laboratory practice.
- Encourage diagnostic and taxonomic publications.

CPM-11 Recommendations on the importance of pest diagnosis

Contracting Parties to:

- Share diagnostic protocols used by NPPOs.
- Encourage and support experts to contribute to the IPPC standard setting processes for Diagnostic Protocols.
- Consider strategic needs for expertise in taxonomy of pests and classical diagnostic skills.
- Pool resources with other NPPOs to ensure sufficient diagnostic capacity and capability is in place to meet future demand.

CPM-11 Recommendations on the importance of pest diagnosis

RPPOs to:

- Support the development of diagnostic protocols and other resources relevant to their region and share them on the IPPC phytosanitary resources pages.
- Support the development of guidance on laboratory requirements for pest detection and on the overall management and technical aspects for a diagnostic laboratory.



CPM-11 Recommendations on the importance of pest diagnosis

RPPOs to:

- Undertake knowledge exchange and training on diagnostic methods and laboratory capability.
- Work to enhance expertise and capacity within the region, such as the identification of regional experts.
- Identify and encourage the development of centres of expertise that NPPOs can access within the region.

Development of pest diagnostic capacities of contracting parties

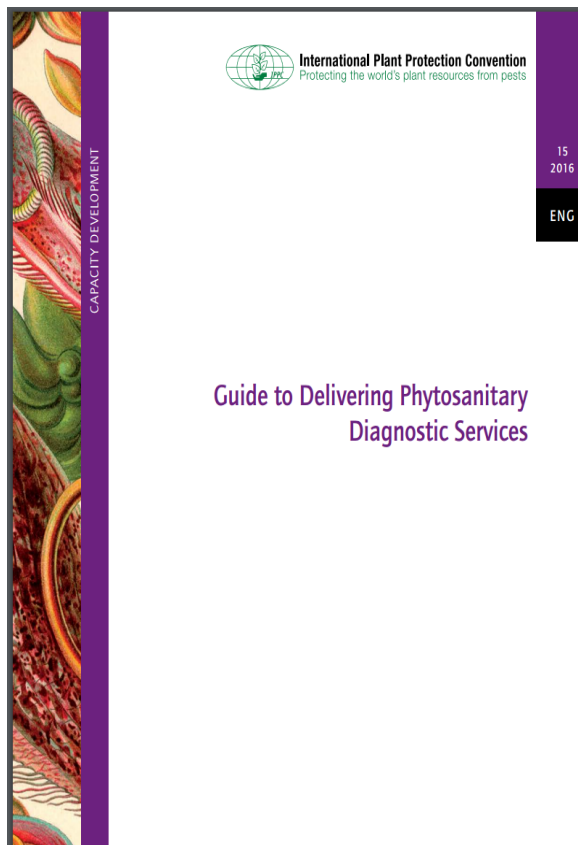
IPPC Secretariat:

- Facilitates evaluation of the current pest diagnostic capacities and capabilities of contracting parties (CPs) through the application of the Phytosanitary Capacity Evaluation (PCE) tool.
- Encourages use of the [IPPC Guide to delivering phytosanitary diagnostic services](#) as a basis for national standard operational procedures and guidelines for phytosanitary labs.

IPPC Guide to Delivering Phytosanitary Diagnostic Services

This guide provides information to support the establishment, operation and maintenance of diagnostic laboratories and services in order to support national phytosanitary systems.





<http://www.phytosanitary.info/information/plant-diagnostics-manual>

Functions of the diagnostic laboratory

- providing rapid and accurate diagnosis of pests
- recording and maintaining data on pest occurrences
- detecting and tracking new and invasive pests
- facilitating responses to clients
- delivering timely and cost-effective services



Functions of the diagnostic laboratory

A diagnostic laboratory can support:

- extension
- research
- training at the state or country level
- crop survey work
- phytosanitary regulatory services



Capabilities for pest identification

- Operational Basis
- Hard infrastructure
- Soft infrastructure
- Sample management
- Diagnosis
- Imaging specimens
- Remote diagnostics
- Reference collections
- Reporting

Diagnostic laboratory

Laboratory workflow



Operational basis of diagnostic laboratory

- Sustainability considerations
- Strategic plans
- Mechanisms for funding
- Legal support
- Human resources
- Training laboratory personnel



Hard infrastructure of the plant diagnostic laboratory

- Laboratory site
- Laboratory facilities
- Contingency plans
- Hygiene
- Reference collections



Soft infrastructure of the plant diagnostic laboratory

- Laboratory equipment
- Quality system
- Responsibilities of management
- Management of resources
- Measurements, analysis and improvement
- Technical requirements
- Laboratory information management system



Laboratory workflow

Sample management

Diagnosis

Imaging specimens



Laboratory workflow

Remote diagnostics for
plant pests



Reporting



Sample fate



Conclusions

This guide:

- Is intended for managers of technical programmes within NPPOs in order to set up and sustain a functional diagnostic laboratory system.
- Brings together, in one place, some of the operational and functional considerations that lie behind providing a diagnostic service.
- Should be used as a source of general information only.
- Can be used as a basis for development of training materials and standard operating procedures (SOPs).





DIAGNOSTIC PROTOCOLS FOR REGULATED PESTS (ISPM 27)

Minimum requirements for reliable diagnosis

Sensitivity

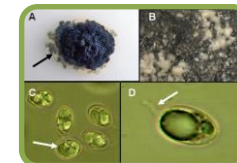
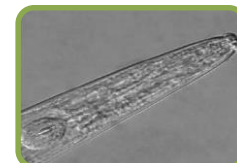
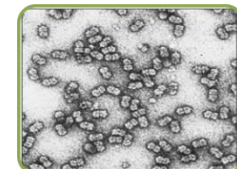
Specificity

Reproducibility



12 adopted diagnostic protocols (as per July 2016)

- DP 1: *Thrips palmi*
- DP 2: *Plum pox virus*
- DP 3: *Trogoderma granarium*
- DP 4: *Tilletia indica* Mitra
- DP 5: *Phyllosticta citricarpa* (McAlpine) Aa on fruit
- DP 6: *Xanthomonas citri* subsp. *citri*
- DP 7: *Potato spindle tuber viroid*
- DP 8: *Ditylenchus destructor* and *Ditylenchus dipsaci*
- DP 9: Genus *Anastrepha* Schiner
- DP 10: *Bursaphelenchus xylophilus*
- DP 11: *Xiphinema americanum sensu lato*
- DP 12: Phytoplasmas



Group exercise 2

- Breakout into groups of 3 to 4.
- Discuss in your group what you consider the 5 most important elements affecting sustainability of pest diagnostics services in your countries.
- For each element identified, list at least 2 reasons to support your choice.
- In plenary:
 - Group 1 reports
 - Subsequent groups report only elements and reasons that have not yet been identified.

CONTACT

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