



***REPORT***

Paris, France  
26-30 November 2012

# **Technical Panel on Diagnostic Protocols November, 2012**



**Food and Agriculture Organization of the United Nations**

## CONTENTS

EXECUTIVE SUMMARY - Technical Panel on Diagnostic Protocols.....	4
1. Opening of the meeting .....	5
1.1 Welcome .....	5
1.2 Welcome to new members and introductions .....	5
1.3 Brief presentation on the IPPC, TPDP and roles of participants .....	5
1.4 Selection of the Chair and Rapporteur.....	5
1.5 Review and adoption of agenda.....	5
1.6 Current specification for the TPDP .....	5
2. Administrative Matters.....	5
2.1 Local information .....	5
2.2 Documents list .....	6
2.3 Participants list .....	6
3. Reports .....	6
3.1 Previous meetings of the TPDP (July 2010).....	6
3.2 TPDP intersession work: 2010-08 to 2012-10.....	6
3.3 Extracts from other meeting reports of relevance to the TPDP (SC Nov 2010, CPM-6, SC May 2011, SC Nov 2011; CPM-7, SC May 2012) .....	6
3.4 Current work plan.....	7
4. Procedures related to TPs (for information).....	7
5. Procedures and guidance related to TPDP (including consideration of the need for revision) .....	7
5.1 TPDP procedure: Working procedures .....	7
5.2 TPDP procedure: Instructions for authors .....	8
5.3 TPDP procedure: Checklist for discipline leads and referees .....	9
5.4 TPDP procedure: Criteria for prioritization of protocols .....	9
5.5 TPDP procedure: Draft checklist for authors.....	9
5.6 Draft standardized format for protocols.....	9
5.7 Improvements to the standard setting process .....	10
6. Update on the development of diagnostic protocols .....	13
6.1 General overview and reports on individual DPs by discipline leads, and review of working priorities .....	13
6.2 Specific discussions on the scope of protocols .....	14
6.3 Review of experts associated with the work programme .....	17
6.4 Consideration of a possible study on diagnostic protocols.....	18
7. Scrutiny of draft diagnostic protocols .....	19
7.1 Draft DP: Potato spindle tuber viroid (2006-022) .....	19
7.2 Draft DP: <i>Erwinia amylovora</i> (2004-009).....	21
7.3 Draft DP: <i>Xanthomonas citri</i> subsp. <i>citri</i> (2004-011) .....	22
7.4 Draft DP: <i>Sorghum halepense</i> (2006-027) .....	23
8. QA issues related to DPs .....	23

8.1 Use of the terms analytical/diagnostic specificity and sensitivity, reliability and reproducibility, validation of methods, ring testing .....	23
9. Priorities for new protocols and further work .....	24
10. Update on the work of other organisations .....	25
ISO (especially regarding draft ISO standard 13484) .....	25
CBOL, QBOL-EPPO Conference .....	25
Global Taxonomy Initiative (GTI) .....	25
11. Analysis of roles and functioning of the TPDP (e.g. members, editorial teams, secretariat, steward, actions in relation to development of protocols, member comments) and possible improvements .....	25
12. Work plan for 2012-2013 .....	27
13. Date and location of next meeting: EPPO headquarters, Paris, France.....	27
14. Close.....	27
Appendix 1 - Agenda .....	28
Appendix 2 – Documents List (by document number) .....	31
Appendix 3 – Participants List and contact information .....	33
Appendix 4 – TPDP Intersession Work Report .....	36
Appendix 5 – Working procedures .....	41
Appendix 6 – Instructions for authors .....	46
Appendix 7 – Checklist for authors.....	62
Appendix 8 – TPDP 2012/2013/2014 Work Plan (by action).....	65
Appendix 9 – Expert Consultation Process .....	68
Appendix 10 – TPDP Medium Term Plan .....	70
Appendix 11 – Working Priorities .....	71
Appendix 12 – Consideration of proposals for new DPs from the 2007 call for topics.....	95

## **EXECUTIVE SUMMARY - Technical Panel on Diagnostic Protocols**

**EPPO Headquarters, Paris, France  
26-30 November 2012**

The TPDP met in November 2012, hosted by EPPO at their headquarters in Paris, France. The TPDP reviewed and updated their working procedures to improve them and bring them in line with the CPM-7 (2012) adopted IPPC standard setting process as well as to detail the roles and functioning of the TPDP. The use of a new expert consultation of draft diagnostic protocols (DP) was discussed and will be implemented in 2013 which will allow technical input from experts in the early stage of DP development. Quality assurance issues were discussed as well as priorities for new DPs. The TPDP reviewed some of the activities by ISO, CBOL, QBOL-EPPO and the Global Taxonomy Initiative that may have an impact on the work of the TPDP.

The TPDP provided input to a potential Study on the utility of IPPC diagnostic protocols and established the TPDP work programme for the next year.

A general review and update on the status of several DPs under development was discussed and the scopes of several DPs were adjusted.

The TPDP conducted a detailed review on the following four DPs:

- *Potato spindle tuber viroid* (2006-022)
- *Erwinia amylovora* (2004-009)
- *Xanthomonas citri* subsp. *citri* (2004-011)
- *Sorghum halepense* (2006-027)

## **TECHNICAL PANEL ON DIAGNOSTIC PROTOCOLS**

**EPPO Headquarters, Paris, France  
26-30 November 2012**

### **1. Opening of the meeting**

#### **1.1 Welcome**

#### **1.2 Welcome to new members and introductions**

The Technical Panel for Diagnostic Protocols (TPDP) was welcomed by Ms Françoise Petter on behalf of the European and Mediterranean Plant Protection Organization (EPPO). She was pleased that EPPO would have the opportunity to host the next three meetings, as activities on diagnostics are also important for EPPO. She explained that EPPO operates several diagnostics panels in different disciplines, and has recently developed the description of molecular methods in some protocols. During the week, the TPDP members had the opportunity to visit the Entomology Department of the Paris National History Museum, which contains approximately 45 million specimens. The TPDP also had the opportunity to hear presentations on the EPPO database on quarantine pests (PQR), the EPPO Global Database prototype and the EPPO Diagnostic Database.

The International Plant Protection Convention (IPPC) Secretariat welcomed the participants, introduced the new members, as well as Ms Adriana G. Moreira, the new IPPC Secretariat staff, who will become the IPPC Secretariat Lead for the TPDP after this meeting. Participants introduced themselves briefly. The steward, on behalf of the TPDP and the IPPC, thanked EPPO for hosting the meeting.

#### **1.3 Brief presentation on the IPPC, TPDP and roles of participants**

The IPPC Secretariat presented overview information on the IPPC, the Secretariat activities in standard setting, the work and operation of Technical Panels (TPs) and the roles and responsibilities of participants in TPDP meetings.

#### **1.4 Selection of the Chair and Rapporteur**

Ms Géraldine Anthoine was selected as chairperson and Mr Brendan Rodoni as rapporteur.

#### **1.5 Review and adoption of agenda**

The TPDP agreed the agenda (Appendix 1 to this report) with some modifications to the order. Agenda item 6.4 was added to discuss items arising from the recent meeting of the Standards Committee (SC) (November 2012).

#### **1.6 Current specification for the TPDP**

The steward presented the specification, and noted that it had been adjusted at the SC April 2012 meeting to add a task to review appropriate draft International Organization for Standardization (ISO) standards under the Subcommittee “horizontal methods for molecular biomarker analysis” (TC34/SC16), identify standards of significance for the IPPC, and seek guidance from the SC on whether to provide comments to ISO.

### **2. Administrative Matters**

#### **2.1 Local information**

The organiser provided local information, meeting logistics and arrangements.

## 2.2 Documents list

The list of documents is attached as Appendix 2 to this report. The diagnostic protocol on *Sorghum halepense* had been made available at the meeting, as well as the check list for authors of protocols.

## 2.3 Participants list

The list of participants and contact information is attached as Appendix 3 to this report. Mr Colin Jeffries (SASA - Science and Advice for Scottish Agriculture, Edinburgh, Scotland), the lead author of the *Potato spindle tuber viroid* diagnostic protocol (DP) was invited to attend the meeting during the discussions on this protocol.

## 3. Reports

### 3.1 Previous meetings of the TPDP (July 2010)

The steward introduced the report from last TPDP meeting in 2010 (Washington D.C., United States of America)<sup>1</sup>. There were no modifications proposed.

### 3.2 TPDP intersession work: 2010-08 to 2012-10

The IPPC Secretariat introduced the TPDP intersession report. Topics that require action will be covered under different agenda items during the meeting. The TPDP intersession report is attached as Appendix 4 to this report.

### 3.3 Extracts from other meeting reports of relevance to the TPDP (SC Nov 2010, CPM-6, SC May 2011, SC Nov 2011; CPM-7, SC May 2012)

The steward updated the TPDP on the outcomes of the Commission of Phytosanitary Measures (CPM) and SC meetings of relevance to the TPDP. The Steward highlighted some issues:

#### *SC May 2011*

- The SC requested to all TPs to review their medium term plan annually. The TPDP medium term plan could indicate when the protocols on the TPDP work programme are expected to be reviewed by the TPDP prior to member consultation. The TPDP medium term plan was discussed under agenda item 6.1.
- The SC discussed the review of draft ISO standards, and the TPDP discussed this further under other agenda items.

#### *CPM-7 (2012)*

- A revised IPPC standard setting procedure was adopted by CPM-7 (2012). One major change is that the SC will, from now on, adopt DPs on behalf of the CPM. The SC will approve DPs, which will then be submitted to a 45 day notification period, during which contracting parties can raise formal objections. If no formal objections are raised, the DP will be adopted and the next CPM will note it. The aim of this new process is to streamline the adoption of DPs, and to ensure that IPPC members raise major issues during member consultation. This may help speed up the adoption process for DPs.

#### *SC November 2012*

- The SC had requested the TPDP to discuss a possible study on how widely DPs are used by NPPOs and if they are being used in languages, the TPDP discussed this issue further under agenda item 6.4.
- The SC requested the Secretariat to add an agenda point on “engaging experts” to Technical Panel (TP) meetings. The Secretariat, with inputs and ideas expressed by TPDP members, had prepared a document on how to further improve the development of DPs (topic that has been

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<sup>1</sup> 2010 TPDP Meeting Report: [https://www.ippc.int/index.php?id=tpdp&no\\_cache=1&L=0](https://www.ippc.int/index.php?id=tpdp&no_cache=1&L=0)

raised by TPDP members at many occasions), which includes the engagement of experts. The TPDP discussed this issue further under agenda item 11 in a “brainstorming format”.

### 3.4 Current work plan

The IPPC Secretariat presented the current TPDP work plan. There were no comments.

## 4. Procedures related to TPs (for information)

The IPPC Secretariat reviewed the common procedures for TPs. One member asked about the procedures to propose new DPs. The IPPC Secretariat mentioned that there would be a call for topics in 2013. The submissions received will be reviewed by the SC for a decision on which topics (including suggestions for diagnostic protocols) to include on the *List of topics for IPPC standards*. The TPDP may also suggest new DPs through this process. One TPDP member suggested that suggestions for new IPPC DPs could be on DPs that had already been developed by Regional Plant Protection Organizations (RPPOs). Also, when additional methods are identified for a protocol but need further development, an initial version could be submitted with the methods available, and other methods be included later, when fully developed. This could streamline the development of DPs.

## 5. Procedures and guidance related to TPDP (including consideration of the need for revision)

### 5.1 TPDP procedure: Working procedures

The IPPC Secretariat and the steward introduced the TPDP working procedure with a few changes in accordance with the standard setting process agreed at CPM-7 (2012)<sup>2</sup>. A number of changes were identified under several agenda items. The revised working procedures are attached as Appendix 5 to this report.

The main changes were:

- For clarity, the current names of authors and groups involved in drafting DPs were modified as follows: “editorial team” was changed to “diagnostic protocol drafting group” (or DP drafting group), composed of a “lead author” and several “co-authors”. This terminology should now be applied consistently;
- It is important that the best experts should be part of the DP drafting group. Provisions were added that the discipline lead can recommend authors for a DP in addition to nominations received during calls for authors. Prior to proposing an author, the discipline lead should make sure that they commit to the tasks involved. Calls for experts could also be transmitted to appropriate scientific societies by TPDP members.
- It is important to provide to the DP drafting groups a timeline for the preparation of the first draft of a DP. The TPDP agreed that the discipline lead and lead author should agree on a timeline in the first 3 months, leading to a first draft of the DP being prepared by the DP drafting group within 6 to 12 months;
- Provisions are needed to ensure that the development of a DP is not blocked by the lack of response from an author. The TPDP agreed that lead authors or co-authors could be withdrawn from a DP drafting group, after an appropriate period of time if they do not respond to requests by the discipline leads or lead authors (as described in the Working Procedures).
- It was noted that discipline lead may, if necessary, request the IPPC Secretariat to send a notification to the drafting group member or their NPPO in order to help ensure the drafting group member is able to continue to contribute to the review of a DP. This may increase the profile and add recognition to the work of experts.

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<sup>2</sup> CPM-7 (2012) Report: [https://www.ippc.int/index.php?id=cpm&no\\_cache=1&L=0](https://www.ippc.int/index.php?id=cpm&no_cache=1&L=0)

- Provisions for the revision of standards were added, based on discussion under agenda item 5.7 as well as on a statement of commitment for authors (agenda item 11).

The TPDP agreed to:

- *Invite the SC to note* the revised TPDP working procedures (Appendix 5 to the TPDP report) and to specifically *note* that, where necessary, discipline leads, in parallel to the normal call for authors, may seek appropriate authors to take part in the DP drafting group.

## 5.2 TPDP procedure: Instructions for authors

The IPPC Secretariat and the steward introduced the TPDP instructions for authors. A number of amendments were proposed under several agenda items. The Instructions for authors were modified as presented in Appendix 6 to this report and the main points of discussion were as follows:

- (1) Personal communications may be cited in DPs if they are provided by experts and add useful information for the DP;
- (2) The acknowledgments section of a diagnostic protocol should include those who provided significant contributions for the development of the protocol. The inclusion of names in the acknowledgements should be at the discretion of the discipline lead in consultation with the lead author; the list will not necessarily include all experts having commented on the draft, nor the discipline lead and referee. Some TPDP members noted that, as the work done as discipline lead and referee is part of their normal work as a TPDP member, it would not be appropriate that they be mentioned in that section;
- (3) One member raised concerns in relation to the use of original (unpublished) material in DPs, such as photographs and identification keys, specially developed for a DP, and how these should be protected. The member suggested there should be a clause of confidentiality when these are circulated to co-authors or other experts. The TPDP first emphasized that all data in DPs should be published, and where possible validated and/or peer reviewed, in particular diagnostic methods. However, it may happen that unpublished data is included (such as photographs and keys prepared specially for the DP). In that case, the TPDP noted that the authors of such material should clearly understand that all information in a draft or adopted standard (such as a DP) is publically available, and there is no possibility to protect this material. The only possibility in a DP is to mention the name of the author of the material in the legend of the photograph/key. Authors should be clear on this as they have to decide whether to provide such original material (in which case it will be made publically available without protection) or, for example, decide to publish it first in a scientific publication under their name;
- (4) Where parameters such as pH, time and temperature are indicated, a precise value should be indicated if it is critical to the method (e.g. an analysis to be performed at exactly 15 °C); in other cases, either a range of values should be given, or the word “approximately” be used before the value;
- (5) For each method, where possible, validation data should be indicated, and if an element is not available (e.g. sensitivity), it may be useful to indicate it in the method description, in order to clearly indicate that this element has not simply been omitted;
- (6) For molecular methods, information on controls and minimum requirements for controls should be given, as well as on the interpretation of results. Preliminary standardized sections have been included in the DPs under review at this meeting (see agenda item 7) and will be further considered when developing the standardized format for protocols (agenda item 5.5);
- (7) For molecular methods, the gene locus should be mentioned for the gene target.

Ms Petter (EPPO Secretariat) presented specific aspects of the EPPO Instructions for authors of diagnostic protocols. She mentioned that the EPPO panels on diagnostics had decided that additional details were needed for the description of molecular methods, in order for laboratories to be able to perform the tests. There was no time to consider this in detail at the meeting, but the TPDP noted that, especially for PCR methods, the value of this approach may need to be assessed for IPPC protocols. It

was agreed that discipline lead for Nematology will prepare a document for the next TPDP meeting with a proposed template table with the information required to run a molecular test for diagnosis and reaction conditions for PCRs .

The TPDP agreed to:

- *Invite the SC to note* the revised TPDP Instructions for authors (Appendix 6 of this report).
- *Invite the SC to note* that all data used in DPs are publicly available.
- Discipline lead for Nematology will develop a draft document with a table template format for PCR reaction conditions for the next TPDP Meeting.

### 5.3 TPDP procedure: Checklist for discipline leads and referees

The IPPC Secretariat introduced the checklist for discipline leads and referees, the panel felt that no modifications were needed.

### 5.4 TPDP procedure: Criteria for prioritization of protocols

The criteria for the prioritisation of diagnostic protocols were presented. One member wondered whether the ability of the pest to spread should be added as criteria, as this would allow giving a higher priority to emerging pests. The Chairperson reinforced that a DP is developed for trade-related aspects and not for the pest. No criteria were added.

### 5.5 TPDP procedure: Draft checklist for authors

As agreed in the previous TPDP Meeting (Washington, USA, 2010), a checklist for authors was developed and presented by one TPDP member. The TPDP reviewed the checklist and the following items were discussed:

- This checklist is a reminder for authors; a short document to assure the planning development process of a DP will be followed with all steps addressed;
- Other criteria need to be added to the checklist, such as controls, interpretation of the results, sensitivity and specificity;
- There is a need to emphasize that data used in the DP are publically available;
- The full document of the Instructions for authors will continue to be sent to the DP drafting group, and in the future the standardized format for protocols;
- The checklist should be annexed to the future standardized format for DPs (see section 5.5).
- The checklist was further adjusted and is attached in Appendix 7 to this report.

The TPDP agreed to:

- *Invite the SC to note* the revised TPDP Checklist for authors (Appendix 7 to the TPDP report), *and note* that it will become an annex to a future standardized format for DPs.
- The checklist for authors will be an annex to the future standardized format for DPs (see section 5.5)

### 5.6 Draft standardized format for protocols

The IPPC Secretariat introduced the draft paper on a standardized format for protocols. The TPDP agreed that such a document would be valuable for DP drafting groups, and should be developed. The TPDP discussed whether the Instructions for authors should be part of that document, but finally concluded that it should be kept separately. The checklist for authors would be an annex to the future standardized format for DPs. Thus, authors would receive three documents: ISPM 27:2006 *Diagnostic protocols for regulated pests*, Instructions for authors, and the future standardized format for DPs (including the checklist for authors).

A core group was established to develop the standardized format of DPs as outlined in the TPDP work plan for 2012-2013 (see Appendix 8 to this report).

The TPDP agreed that:

- A draft standardized model for DPs will be prepared for the next TPDP meeting (2013).

## 5.7 Improvements to the standard setting process

### *CPM decisions*

The IPPC Secretariat gave a presentation on the new standard setting process, which has four major steps: *i)* development of the *List of Topics for IPPC Standards*; *ii)* drafting; *iii)* member consultation for draft ISPMs; *iv)* adoption and publication. The main elements of discussion were as follows:

#### **i) Stage 1: Developing the List of Topics for IPPC Standards**

- Regarding the development of the List of Topics, a new call for topics will be held in 2013.

#### **ii) Stage 2: Drafting**

- (1) During the DP drafting stage, the best experts should be selected for each DP drafting group. Adding experts to the DP drafting group when their expertise is needed could be possible under certain circumstances, since it is a voluntary process. Provisions were added in the Working Procedures to allow discipline leads to suggest experts to the TPDP to be included in a DP drafting group. Also, lead authors should be encouraged to consult as many experts as possible worldwide to help ensure a smooth adoption.
- (2) The TPDP agreed again that, once a first draft has been reviewed by the discipline lead and before it is presented to the TPDP, it should be reviewed by a wider group of experts; the expert consultation on draft diagnostic protocols on the IPP would be used for this purpose, for all drafts (see item “Use of new tools: expert consultation on the IPP” below). A wider consultation of experts on draft protocols in earlier stages of development is crucial to ensure the quality of the protocol and possibly allow for all concerns being addressed prior to the 45 notification period.
- (3) Experts with quarantine expertise would be very useful and valuable for commenting and reviewing a DP during the expert consultation period.
- (4) The development of a DP requires the investment of time and efforts from experts. Contracting parties need to be aware of the DP development procedure and support the work by proposing and encouraging experts to draft the protocols.
- (5) It was proposed that the “call” for the expert consultation on draft diagnostic protocols could be publicized within scientific societies. The steward reinforced that it is possible to do this but, the TPDP needs to bear in mind that DPs need a balance between the good technical expertise and practical aspects, since DPs are for NPPOs and need to be relevant to the circumstances, e.g. surveillance, monitoring, control, interception or import of regulated pests.

#### **iii) Stage 3: Member consultation for draft ISPMs**

- If there are comments with conflicting interests the lead author, discipline lead and later the TPDP members need to justify and agree on a solution before sending the draft to the SC for adoption.

#### **iv) Stage 4: Adoption and revision**

- (1) The IPPC Secretariat noted that, unlike for other ISPMs, it is the SC that adopts draft DPs on behalf of the CPM (CPM-7 (2012))<sup>3</sup>, after a 45-day formal objection period during which contracting parties may object to the DP. If no formal objection is received, the SC adopts the protocol and the CPM notes the adoption at the following meeting (SC April 2012)<sup>4</sup>. The formal objection process and criteria for deciding whether formal objections are technically justified

<sup>3</sup> CPM-7 (2012) Meeting Report, appendixes 4 and 5. <https://www.ippc.int/index.php?id=13330>

<sup>4</sup> SC April 2012 Meeting Report. <https://www.ippc.int/index.php?id=sc>

were presented. It was noted that this process would be used for the first time with the draft DPs on *Guignardia citricarpa* (2004-023) and *Tilletia indica* (2004-014).

- (2) The IPPC Secretariat invited reactions on the CPM decision<sup>10</sup> (CPM-7 (2012))<sup>1</sup> on improving the standard settings process, related to technical revision of adopted DPs. This decision provides that the SC may approve technical revisions to DPs by electronic means, and criteria should be developed for approving such revisions. Under this system, there would not be a member consultation prior to the 45 day notification period.

*Timing of revisions.* The TPDP discussed whether the review of adopted DPs should be made on a regular basis. ISPM 27:2006, Appendix 1, section 2 provides that TPDP members review the DPs in their discipline “on an annual basis or as determined by the TPDP”. The TPDP felt that an annual revision would be demanding and have resource implications for the TPDP members and the Secretariat (processing, translating and publishing). More importantly, there was a general view that NPPOs should have a sufficient time period to implement and use the protocol before revision is considered. It was considered appropriate that adopted DPs be reviewed every 5 years unless a specific issue was raised. This was included in the Working Procedures.

*Requests for revision.* The need for revision could be identified by receiving feedback from users (such as NPPOs) accompanied by the associated scientific basis for the changes required, or through a literature review by the discipline lead, with feedback from authors as necessary. The TPDP noted that the following sentence of ISPM 27:2006, Appendix 1, section 2 should be included in each DP from now on in order to be clear that adopted DPs will be reviewed and attract comments once users have started using the protocols: «A request for a revision to a diagnostic protocol may also be submitted by NPPOs, RPPOs or CPM subsidiary bodies through the IPPC Secretariat ([ippc@fao.org](mailto:ippc@fao.org)), which will in turn forward it to the TPDP.»

*Criteria for revision.* According to the CPM Decision 10 (CPM-7 (2012)) the SC may approve the DP technical revision via electronic means and the SC should develop criteria for revision of adopted DPs. The TPDP have developed some criteria to be used to determine what would constitute a technical revision to a DP which would allow for a speedier update. Other revisions would need to be subject to the normal DP adoption process (i.e. member consultation, redrafting, SC approval, formal objection period, SC adoption).

The following criteria were proposed for technical revisions:

- Minor editorial changes;
- Change in taxonomy as long as it does not change the identification of the pest;
- Additional information on the method described in the DP, for example addition of validation data (e.g. sensitivity and specificity), changes in the amount of DNA required;
- New distribution in official or published notification as long as it does not affect the protocol;
- New host plant as long as it is an official record and does not affect the diagnosis, i.e. does not change the specific instructions in the DP.

When this procedure takes place, contracting parties should be informed that a DP has been revised according to this process.

The following criteria that were proposed to not be reflected as technical revisions (requiring the regular process of DP adoption):

- A new validated method is available;
- New host with published scientific information if its affect the diagnosis;
- Deletion of a method;
- Pest information that may impact international trade.

#### ***Use of new tools: expert consultation on the IPP***

The IPPC Secretariat explained the process for the expert consultation on draft diagnostic protocols on the IPP, and invited the TPDP to identify protocols to be submitting using this process. The panel

agreed that this is an important tool to ensure quality to the protocol by receiving input and feedback, based scientifically, for the improvement of the draft DP from a wider number of experts worldwide. Points of discussion are listed below. The expert consultation process is attached as appendix 9 to this report.

Originally, the TPDP had proposed that the expert consultation should be used at earlier stages of drafting, i.e. when a first draft has been reviewed by the discipline lead and before it is presented to the TPDP. However, the TPDP decided that expert consultation should be used for all drafts, prior to the TPDP meeting that would finalize them for recommendation to the SC for member consultation.

The expert consultation will be advertised by discipline leads by the IPPC Secretariat through NPPOs and RPPOs, and by TPDP members. Discipline leads may request the IPPC Secretariat to provide a letter to specific individual experts inviting them to comment on the draft DP if it is felt that this will give more authority to the process (as provided in the revised Working Procedures, agenda item 5.1). The panel suggested that information for scientific societies is crucial to reach all experts relevant to the DP that NPPOs or RPPOs might not reach during the member consultation period. The TPDP agreed that TPDP members are better placed than the Secretariat to reach these societies.

The panel decided to maintain the authors' name on the DP to be released for expert consultation, although acknowledging that there can be disputes between authors and this could mean that comments might be made;

In order to avoid authors and experts disputes on the information, the expert comments transmitted to the author must be anonymous. Also, duplicated comments must be compiled just once;

The DP at this stage of consultation is not publically available, and this should be clear in the DP text in order to avoid the inappropriate circulation of the draft. The TPDP proposed the use of a watermark or a sentence that indicates the information of an early draft under development, not for circulation and / or confidential documents.

#### ***Use of new tools: virtual meetings***

The IPPC Secretariat explained the use of the tool "GoToMeetings" and those virtual meetings are important to keep track on the panel's activities. The TPDP agreed that its first virtual meeting would take place in February, prior to the date when drafts for expert consultation are due.

The TPDP agreed to:

- *Invite the SC to note* that TPDP is willing to review the DPs proposed during the call for topics to give inputs, especially on whether they fit the *criteria for the prioritization of DPs*.
- *Invite the SC to note* that the TPDP agrees that the process to approve a DP technical revision of an adopted DP by SC via electronic means is useful for accelerating the DPs reviewing process, and *invites the SC to note* that it is only applicable to certain technical revisions.
- *Invite the SC to agree* that criteria for DP technical revision should be only the following:
  - . Editorials;
  - . Taxonomic changes that do not affect the identification of the pest (and do not change the diagnosis);
  - . Addition of validation data relating to the methods already on the DP;
  - . Improved specification of method, e.g. additional descriptors such as amount of DNA;
  - . Pest information;
  - . New information on distribution of official notification;
  - . New host that may help the diagnosis reported in an official notification and does not affect the diagnosis.
- *Invite the SC to note* the TPDP suggestion that under the process of DP technical revision contracting parties should be informed that the protocol was revised and published on the IPP.
- *Invite the SC to note* that the TPDP suggests that DPs be reviewed every 5 years, and *note* that the working procedures were modified to reflect the proposed review process.
- Noted the process for expert consultation on the IPP (Appendix 9 to the TPDP report), and that this process will apply to all future draft DPs.

## 6. Update on the development of diagnostic protocols

### 6.1 General overview and reports on individual DPs by discipline leads, and review of working priorities

#### *Status of protocols*

The TPDP reviewed the status of protocols. The discipline leads updated the panel on the status. Two DPs under Fungi and fungus-like organisms discipline will be sent to the SC for adoption on behalf of the CPM in 2013 by the new standard setting process. These two protocols are *Guignardia citricarpa* (topic number 2004-023) and *Tilletia indica* (topic number 2004-014).

Three DPs are expected to be ready for member consultation in 2013: *Erwinia amylovora* (topic number 2004-009) (agenda item 7.2) and *Xanthomonas citri* subsp. *citri* (topic number 2004-011) (agenda item 7.3) under Bacteriology discipline, and *Potato spindle tuber viroid* (topic number 2006-022) (agenda item 7.1) under Viruses and phytoplasmas discipline.

Expert consultation on draft DPs is expected to be held in the first part of 2013 (deadline March 2013) for five (5) DPs. These DPs are intended to be discussed in the next TPDP meeting in June 2013 as follows in the table below:

**Table 1.** Discipline and diagnostic protocol to be submitted for expert consultation via the IPP in the first part of 2013

Discipline (topic number)	
Fungi and fungus-like organisms (2006-006)	<i>Phytophthora ramorum</i> (2004-013)
Insects and mites (2006-007)	<i>Anastrepha</i> spp. (2004-015)

Nematodes (2006-008)	<i>Ditylenchus destructor</i> / <i>D. dipsaci</i> (2004-017)
Viruses and phytoplasmas (2006-009)	<i>Citrus tristeza virus</i> (2004-021) Phytoplasmas (general) (2004-018)

As requested by the SC, the TPDP prepared a medium term plan with the DPs in the work programme (Appendix 10 to this report).

The TPDP agreed to:

- *Invite the SC to approve* the medium term plan (Appendix 10 to the TPDP report).

### Review of working priorities

As requested by the SC, the TPDP reviewed the working priorities for all 29 diagnostic protocols on the work programme based on the *Criteria for the prioritization of diagnostic protocols*. The document on the revision of the working priorities is Appendix 11 of this report. The TPDP agreed that this document will be presented to the SC for noting. The DPs that were proposed in changing the working priorities are listed below. No change was suggested for other DPs reviewed

**Table 2.** Discipline and diagnostic protocol reviewed for the working priority by the 2012 TPDP meeting

Discipline (topic number)	Diagnostic Protocol (topic number)	Current Priority	Proposed Priority
Bacteria (2006-005)	<i>Liberibacter</i> spp. (2004-010)	3	2
Fungi and fungus-like organisms (2006-006)	<i>Phytophthora ramorum</i> (2004-013)	3	2
Nematodes (2006-008)	<i>Aphelenchoides besseyi</i> , <i>A. ritzemabosi</i> and <i>A. fragariae</i> (2006-025)	1	2
Viruses and phytoplasmas (2006-009)	<i>Citrus tristeza virus</i> (2004-021)	3	2
	Phytoplasmas (general) (2004-018)	4	2

The TPDP agreed:

- *To invite the SC to approve* the following changes to the working priorities of DPs:
- *Liberibacter* spp. (2004-010) - Priority 2
- *Phytophthora ramorum* (2004-013) - Priority 2
- *Aphelenchoides besseyi*, *A. ritzemabosi* and *A. fragariae* (2006-025) - Priority 2
- *Citrus tristeza virus* (2004-021) - Priority 2
- Phytoplasmas (general) (2004-018) - Priority 2
- *To invite the SC to note* the complete review of working priorities of DPs (Appendix 11 of the TPDP report).

## 6.2 Specific discussions on the scope of protocols

### Viruses transmitted by *Bemisia tabaci*

A document about the proposition of changing the scope of the DP on viruses transmitted by *Bemisia tabaci* (2006-023) was prepared by Mr Stephan Winter from the Leibniz-Institut DSMZ, Braunschweig, Germany and Mr Gerard Clover from Ministry of Agriculture & Forestry, Auckland, New Zealand. The document was presented by the discipline lead on viruses and phytoplasmas, and the points of discussion are listed below:

- (1) The original scope included all virus species that are transmitted by *B. tabaci*. It is not feasible to develop a single diagnostic protocol which details the detection and identification of all viruses;

- (2) The TPDP agreed with the proposal to limit the scope to begomoviruses transmitted by *B. tabaci*. The TPDP did not recommend that another DP is needed at that stage for the other viruses transmitted by *B. tabaci*.
- (3) One member wondered about the value of a begomovirus DP, as there are many described begomoviruses but only some are regulated. Another member supported that it would still be useful to identify to all begomovirus;
- (4) One member noted that some *B. tabaci* biotypes can transmit begomoviruses and other cannot, and wondered whether a protocol should be developed on *B. tabaci* itself. However, other members noted that the transmission of viruses by different biotypes and differences in pathogenicity are an evolving research area at the moment. In addition, one member believed that there were no regulations based on biotypes and a DP may not be appropriate.

The TPDP agreed to:

- Invite the SC to approve the change on the scope of the DP Viruses transmitted by *Bemisia tabaci* (topic number 2006-023) to Begomoviruses transmitted by *Bemisia tabaci*.

### ***Tospoviruses***

The composition of the DP drafting group for the DP on Tospoviruses (TSWV, INSV, WSMV) (topic number 2004-019) was briefly discussed. There is a draft on the DP but no feedback has been established with the drafting group. The IPPC Secretariat will contact NPPOs to find out if this was a simple communication problem, e.g. a change in address, or if the authors wish to resign from their duties.

### ***Tilletia controversa in work programme subject: "Tilletia indica and T. controversa"***

The original subject of the DP on *Tilletia indica* (to be sent to SC for adoption in 2013) recently under member consultation was *T. indica* and *T. controversa* (topic number 2004-014). The TPDP noted that when drafting the DP, the drafting group had realized that *T. indica* is more important than *T. controversa* and that the ways of diagnosis are quite different. The TPDP suggested that the SC note that the scope of the original subject "*T. indica* and *T. controversa*" (topic number 2004-014) has changed to *T. indica* only.

The TPDP did not believe that a DP on *T. controversa* was necessary. If members feel that a DP was needed, it should be proposed in the next call for topics.

The TPDP agreed to:

- Invite the SC to note the change on the scope of the original subject *Tilletia indica* / *T. controversa* (topic number 2004-014) to *Tilletia indica*.

### ***Gymnosporangium spp.***

The draft DP on *Gymnosporangium* spp. (topic number 2004-008) was discussed regarding its scope and feasibility.

The discipline lead noted that there are a large number of species worldwide, approximately 15 to 20, and that not all are regulated. The TPDP discussed the utility of a DP in this case, as it would allow identification to the genus only. The discipline lead believed that a DP at genus level for *Gymnosporangium* would not be very useful, as identification for regulatory purposes requires identification of species. The identification of *Gymnosporangium* spp. at species level involves sequencing. Work has been done in Europe, including sequencing, to allow identification of regulated species and species that occur in Europe, but the discipline lead was not sure that similar data was available in other regions. One member noted that a DP at species level would be feasible only if such data exist for other regions.

The discipline lead will contact the lead author for more opinions on the feasibility of a DP for *Gymnosporangium* at species or just at genus level. The panel decided to request the SC to change the status to pending, and this DP will be discussed again in the next TPDP meeting.

The TPDP agreed to:

- Invite the SC to approve the status change of the DP *Gymnosporangium* spp. (topic number 2004-008) to pending.

### ***Interaction between Tephritidae molecular protocol; Bactrocera dorsalis; Anastrepha***

The discussion on this session was focused on the *Tephritidae* molecular protocol (topic number 2006-028) and the feasibility of identification at species and genus level. The three discipline leads in entomology and the steward held a side meeting to discuss the interactions between the fruit fly protocols.

As a result of these discussions, no change was proposed to the scope of the DPs on *Bactrocera dorsalis* and *Anastrepha*. Regarding *Anastrepha* spp., it was noted that there is currently no reliable tool for the molecular identification of *Anastrepha* spp., and the protocol should remain morphological.

The discipline lead on Entomology, Mr Norman Barr, and lead author for this draft DP, noted that it had been envisaged to change the scope of the *Tephritidae* molecular protocol to one genus. However, he reported that there is no tool available at the moment, and that the datasets that would be needed for such a protocol do not exist. The project *Tephritidae* Initiative had started in 2006 to collect such datasets, but has not been able to collect all the necessary information yet. It may be possible to develop a DP to the genus level, but this would be of limited use. The panel acknowledged that there are no publicly available scientific data on molecular identification of *Tephritidae* at genus and species level, and that it is not possible to prepare a DP at this stage. It was recognized that assembling the necessary data would require an international coordinated project. The panel decided to request the SC the change in the status to pending. This DP will be discussed again at the 2014 TPDP meeting.

The TPDP agreed to:

- Invite the SC to note that the development of the DP *Tephritidae*: Identification of immature stages of fruit flies of economic importance by molecular techniques (topic number 2006-028) is not considered feasible at the moment and to approve the change of status of this DP to pending, and note that the TPDP will reevaluate the situation at its 2014 meeting.

### ***Dendroctonus ponderosae***

The DP on *Dendroctonus ponderosae* (topic number 2006-019) was discussed at agenda item 6.3. There had been a call for authors with closing date 1<sup>st</sup> November 2012 and a new DP drafting group composition was established.

### ***Liberibacter***

The TPDP noted that when the subject *Liberibacter* (2004-010) was added to the work programme, it was intended to cover the *Liberibacter* associated to the citrus disease “huanglongbing” (i.e. known to date Candidatus *Liberibacter asiaticus*, *L. americanus* and *L. africanus*). Since then, other *Liberibacter* species have been defined, especially Candidatus *Liberibacter solanacearum* whose main host is potato. The TPDP first noted that it would not be possible to cover all species under one protocol, but that it would be important to have protocols for both disease pathogen groups. It was therefore proposed that the scope of the current DP on the work programme be limited to “*Liberibacter* spp. on *Citrus*” (as intended originally). A related proposal is made regarding *L. solanacearum* under agenda item 9.

The TPDP agreed to:

- Invite the SC to approve that the original subject *Liberibacter* (2004-010) intended to cover the pathogens involved in huanglongbing of *Citrus spp.*, and approve the subject be renamed to *Liberibacter spp.* on *Citrus spp.* (2004-010).
- That a call for authors would be needed for *Liberibacter spp.* on citrus.

### ***Xanthomonas citri* subsp. *citri*.**

In discussing the draft DP (see agenda item 7.3), it was clarified that the original subject (2004-011) was *Xanthomonas axonopodis* pv. *citri*, which included a number of strains. However, the main intent of the protocol was to detect and identify citrus bacterial canker.

The taxonomy of xanthomonas has evolved since then, and the disease citrus bacterial canker is now considered to be caused by *X. citri* subsp. *citri* (i.e. the Group A of strains of *X. axonopodis* pv. *citri*), while other groups of strains of *X. axonopodis* pv. *citri* (Group B and C) are now classified as other species and are not relevant for the diagnosis of citrus canker. Consequently, the TPDP notes that the subject will be treated as *X. citri* subsp. *citri*, to reflect the fact that the DP should address the agent of citrus canker.

The TPDP agreed to:

- Invite the SC to note that the original *Xanthomonas axonopodis* pv. *citri* was intended to cover citrus bacterial canker, and note that the subject (2004-011) will now cover only *X. citri* subsp. *citri*.

## **6.3 Review of experts associated with the work programme**

### **- Transfer of protocols to new TPDP members**

### **- Assignment of referees for protocols expected to be completed in 2012-2013**

### **- Update of authors and editorial teams information, including approval of new nominations, and consideration of need for additional/new authors for certain protocols**

Some draft DPs were transferred between TPDP members to take account of the availability of new members and the work load for each. The TPDP approved the new DP leads and referees assigned to the DPs in the working programme.

There had been a call for authors with the closing date 1<sup>st</sup> November 2012 under Insects and mites discipline for *Ips* spp. (topic number 2006-020) and *Dendroctonus ponderosae* syn. *Scolytus scolytus* (topic number 2006-019) and additions to the DP drafting groups were agreed as follows:

**Table 3.** 2012 Summary of nominations for authors and co-authors for diagnostic protocols

<b>Diagnostic Protocol (topic number)</b>	<b>Country</b>	<b>Name</b>	<b>Notes</b>
<i>Dendroctonus ponderosae</i> syn. <i>Scolytus scolytus</i> (2006-019)	Canada	Humes Douglas	Co-author
	France	Jean-François Germain	Co-author
<i>Ips</i> spp. (2006-020)	Canada	Humes Douglas	Lead author
	China	Run Zhi Zhang	Co-author

The panel noted that, regarding the lead authors and co-authors, in some cases, the discipline leads were unable to establish contact. The IPPC Secretariat will try to contact directly with the authors and/or NPPOs to find out if this was a simple communication problem, e.g. a change in address, or if the authors wishes to resign from their duties. The Secretariat will follow-up the TPDP on the next virtual meeting on this issue. The Secretariat will try to establish contact with the following authors:

**Table 4.** Authors and co-authors of diagnostic protocols that the IPPC Secretariat will check the contact information

Discipline (topic number)	Diagnostic Protocol (topic number)	Author	Country
Bacteria (2006-005)	<i>Liberibacter</i> spp. (2004-010)	Jancek Planzinsk	Australia
		Solke de Boer	Canada
	<i>Xanthomonas fragariae</i> (2004-012)	Solke de Boer	Canada
Insects and mites (2006-007)	<i>Anastrepha</i> spp. (2004-015)	Christina Vaccaro	Argentina
	<i>Liriomyza</i> spp. (2006-017)	Chen Nai-zhong	China
		Heung-Sik Lee	Korea Republic
Nematodes (2006-008)	<i>Bursaphelenchus xylophilus</i> (2004-016)	David McNamara	(Ex-EPPO)
		Vladimir Gaar	Czech Republic
Viruses and phytoplasmas (2006-009)	Tospoviruses (TSWV, INSV, WSMV) (2004-019)	Jane Morris	United Kingdom
		Gerhard Pietersen	South Africa
	<i>Potato spindle tuber viroid</i> (2006-022)	Ana Etchervers	Uruguay
		Huimin Xu	Canada
		Nuria Duran-Vila	Spain
		Jorge Abad	United States of America

#### 6.4 Consideration of a possible study on diagnostic protocols

During the SC meeting held on 12-16 November 2012, the SC invited the TPDP to provide feedback on a possible *Study on the utility of IPPC diagnostic protocols*. The main points discussed by the TPDP panel are as follows:

- The TPDP noted a survey can provide very useful feedback to the panel and its activities;
- The survey on the study of the utility of IPPC diagnostic protocols should be addressed to NPPOs and RPPOs;
- In the survey sheet, the TPDP recommends to make a note that if a new proposition on the development of a new DP topic is intended and needed, the NPPO or RPPO should make the request in the next IPPC call for topics;
- In the survey, the following questions should be included, as agreed by the panel:
  - (1) Are you aware of the adopted DPs?
  - (2) Do you use any adopted DP?
  - (3) If so, then in which context? (Official analysis, surveillance, monitoring, post-entry quarantine, training, research...)
  - (4) If not, why are DPs not used?
  - (5) Who uses the DP (Diagnosticians, researchers, NPPO, etc.)?
  - (6) Are you aware of and/or have you ever submitted a proposals for new IPPC DPs for addition to the IPPC list of topics?
  - (7) Are there any other criteria for prioritization that you want to suggest? (Please see the current criteria)
  - (8) Which language version of the protocol do your diagnosticians use?
  - (9) If the protocol is available in English only, would your diagnosticians be able to use it?
  - (10) Do you have any suggestions for improvement of the protocols? Please, list them.

The TPDP agreed to:

- *Invite the SC to consider the TPDP feedback on a possible Study on the utility of IPPC diagnostic protocols that a study on this would be very useful and add value to the TPDP and its activities.*

## 7. Scrutiny of draft diagnostic protocols

The TPDP reviewed the draft DPs that had been submitted for the meeting (reported in the individual sections below). The draft DPs on *Sorghum halepense* was discussed by the TPDP as the discipline lead requested further guidance. Discipline leads will work with authors to further develop the text.

For all the protocols reviewed the following general comments were made and the instructions for authors changed, as mentioned previously:

- (1) DPs should be drafted to make it in a less structured format (less Standard Operational Procedure (SOP) format);
- (2) A section on controls for molecular methods, minimum requirements for controls and interpretation of results should be added as in line with other protocols;
- (3) Symptoms information in the draft DP should be included only if it is important for diagnosis;
- (4) As discussed in other agenda items, precision parameters such as pH, time and temperature critical to the method, should be precisely described. If not, a range should be used or the word “approximately” added;
- (5) For molecular detection sections, the primers *loci* target should always be mentioned.

### 7.1 Draft DP: Potato spindle tuber viroid (2006-022)

The Chairperson welcomed the lead author of the draft annex to ISPM 27:2006 – *Potato spindle tuber viroid* (PSTVd), Mr Colin Jeffries. The lead author and the virology discipline lead, Mr Delano James, introduced the draft DP. The main points of discussion were as follows:

- The author clarified that, although the scope of the DP is PSTVd, many methods included in the DP detect other pospiviroids. The available methods for PSTVd identification are not very specific and final identification is done by sequencing. Later in the development of the draft DP, scientific papers were published with tests claiming to be specific for PSTVd identification, but the DP drafting group was not clear how well they have been validated. So, the DP drafting group considered that the protocol should focus on methods used to test for pospiviroids in general that have been validated;
- The Secretariat would contact the co-authors that were not active anymore in order to clarify whether they still want to be involved in the development of the draft;

Input had been obtained from a number of additional experts. The main comments received from these experts were:

- (1) Addition of other methods. However, those that were not published were not incorporated;
- (2) Suggestions had been made to reduce the introduction text and the number of references. The lead author was concerned that reducing the references might reduce the precision of the text;
- (3) Bioassays were suggested and included;
- (4) More primers sets were suggested, but the DP drafting group decided to include only those primers that had been validated;
- (5) The lack of validation data for certain tests was raised. The DP drafting group added such data when available;
- (6) Description of controls for PCR tests, as well as the minimum requirements for controls, were included;
- (7) Interpretation of the results was included in the draft DP.

The TPDP questioned whether sequencing is obligatory for the protocol. The lead author explained that sequencing is required for PSTVd identification. However, an NPPO can opt or not for using the sequencing step for PSTVd screening. Using sequencing is a NPPO decision with the possibility to finish the diagnosis at the genus identification step using other methods. Without sequencing, it is not possible to detect other viroids that are emerging, e.g. *Tomato chlorotic dwarf viroid* (TCDVd). The use of sequencing improves the diagnosis, since it allows going beyond the genus level. There are no specific primers for PSTVd, which increases uncertainty of identification.

Comments raised by the draft DP referee were discussed. The main comments are described below:

- (1) The lead author will redraft the DP to make it in a less Standard Operational Procedure (SOP) format. However, it was noted that some procedures (e.g. KingFisher) need to be in SOP format; It was questioned whether R-PAGE and hybridisation tests should be described in full and how widely these tests are used. The lead author commented that these tests are used but not common while having other tests that can be performed. The DP drafting group had decided to include them in the draft DP with a reference to the EPPO protocol, which is readily available on the Internet. The EPPO Secretariat confirmed that the EPPO protocol will remain available even if it is updated. For ease of access, the TPDP recommended that such a link should be in the text, and not as a reference;
- (2) The referee had wondered whether the controls are required to be listed in all instances of testing for PSTVd, which makes the text longer and repetitive. The lead author will add a general section on controls at the beginning of the molecular section, and change the order of the controls, with the minimum required controls indicated first to avoid repetitive text information;
- (3) Tests that correspond to the minimum requirements in the protocol would be listed first and optional tests later in the draft DP.
- (4) Discussions on whether in some countries where the viroid is not present it may be problematic to obtain infected material. The lead author explained that positive material can be easily obtained as a plasmid. A member mentioned that positive controls are fundamentally needed to make sure the primers set is functioning;
- (5) The referee suggested reducing the amount of references in the pest information section. Comments were made to keep, for example, the references that target the commodity and the ones that are important for the diagnosis per se than for epidemiology aspects. The lead author will review the references in the pest information section;
- (6) The referee suggested that brand names are include only if essential, e.g. “Homex” tissue homogenizer. The lead author mentioned that brand names are given so that labs can easily source equipment;
- (7) The TPDP supported the lead author on the maintenance of the figure 1 on the draft DP that represents the minimum requirements for the detection and identification of the PSTVd;
- (8) References to relevant sections in the text should be provided in the diagram. The TPDP agreed to include in the instruction for authors the references to sections in flow diagrams whenever possible and applicable;
- (9) It was commented that contact points for a DP should be experts that are included in the drafting of the protocol and should be able to explain and provide information on it;
- (10) An additional figure was proposed for inclusion regarding the genome location of PCR primers, and a table giving details of all PCR primers. The TPDP decided to not include them;
- (11) A Real time reverse transcription-polymerase chain reaction was proposed. The lead author explained that this method had not been published at the time of drafting, but would be valuable. The TPDP noted that this method is now published and could be included.
- (12) Comments on the cut off values (Ct) in the real time PCR section was made regarding if the DP should provide a Ct value. It was decided to include in the draft DP the information that each lab performing the test should develop and validate its own Ct, since it varies according to the

equipment used. Also, it was decided to include the Ct value, which is 32 to 37 and mention the reference that provides this information.

The IPPC Secretariat reinforced that, for this draft DP to be submitted to SC for approval for member consultation in 2013, the draft would need to be revised by the lead author, in collaboration with the discipline lead and co-authors as necessary, and then sent to the TPDP by electronic means for a final review before sending to the SC for an e-decision. The SC would then make a decision at its May 2013 meeting on which draft ISPMs would be sent for member consultation. This means that the revised draft should be provided by the lead author by 15 January 2013, and a draft would be submitted to the SC by e-decision at the latest in March 2013.

The TPDP agreed that:

- The lead author will work on the draft DP and on *Potato spindle tuber viroid* (topic number 2006-022) and provide a revised version to the Secretariat by 15 January

### 7.2 Draft DP: *Erwinia amylovora* (2004-009)

The discipline lead for virology, Mr Delano James, had taken the lead on this protocol in 2010 as there was no bacteriology discipline lead. He would transmit comments from the present meeting to the lead author, and notify the new discipline lead back up for bacteriology. The main discussion points were:

- (1) For the disease common names, the English name was kept and reference was made to ISPM 27:2006 for other languages;
- (2) A section on controls for molecular methods should be added, as for the PSTVd draft DP, as well as minimum requirements for controls, and interpretation of results, in line with other protocols;
- (3) In the sampling and sample preparation section, comments were made on the need to specify a period of time for storage of samples, which can be crucial for detection and identification of the pest. The discipline lead will address this to the lead author;
- (4) The DP should be redrafted to make it in a less Standard Operational Procedure (SOP) format;
- (5) The TPDP noted that protocols with widely-used methods, such as ELISA and immunofluorescence (IF), are described in other protocols (in this case EPPO protocols), and questioned the need to describe these methods in detail in the IPPC protocols. The panel decided that, if there is accessible information, there should be a reference to it;
- (6) Validation data should be included if available and if some elements are missing, this could also be specified in the text;
- (7) It was noted that some information do not have references and, as a TPDP previous decision, unpublished information should not be in a protocol. The discipline lead will check with the lead author to include published references or if in these cases it was a personnel communication and then make this reference on the text;
- (8) The EPPO DP included another real-time PCR test for a different chromosome region. The lead author should decide whether to include it or not, and if decided to include it, this should be mentioned in the comments on the front page;
- (9) The panel noted that the diagram and the text are not in line regarding the identification number of methods for identification. The discipline will correct this;
- (10) Comments were made that the EPPO DP is clearer than the actual IPPC draft DP, and should be considered.

A small group met one evening to review the *E. amylovora* draft DP and propose modifications to be transferred to the author. The chair of the small group informed the TPDP on the changes proposed, including the minimum requirements and the flow diagram, which would be submitted to the lead author for further review. Two tests were established as minimum requirements to provide *E. amylovora* identification and other tests described are for additional confidence of the diagnosis. A discussion on biological tests was made on whether they should be included or not in the draft DP, and if they are needed, they will be raised again during the MC period.

The TPDP agreed that:

- The discipline lead will inform the lead author on *Erwinia amylovora* (topic number 2004-009) of the discussion and changes needed into the draft DP and the necessity to work with the DP drafting group to prepare a revised draft by 15 January.

### 7.3 Draft DP: *Xanthomonas citri* subsp. *citri* (2004-011)

The bacteriology discipline lead, presented the protocol and noted comments for consideration with the lead author and DP drafting group. The discipline lead mentioned that this draft DP was last reviewed by the TPDP at its 2008 meeting and the DP drafting group worked to address the comments. The discipline lead mentioned that an update on detection methods, especially on molecular techniques, was needed, in particular to add specificity and sensitivity data. Two new methods had become available since the last TPDP discussion, but it should be confirmed whether these techniques have been validated and, if so, whether they should be included.

The discipline lead mentioned that changes in taxonomy classification were made in recent years (see under scope section 6.2). The main comments done by the TPDP were:

- (1) On symptoms information, it needs clarification with the lead author whether the symptomatology described is important for diagnosis;
- (2) It is necessary to include a brief introduction on methods for detection section and also mention that controls should be used;
- (3) On the isolation section, it needs clarification on the controls that are required;
- (4) Editorial changes are needed and also a description on the colony morphology;
- (5) As discussed in other agenda items, precision parameters, such as pH, time and temperature critical to the method, should be precisely described. If not, a range should be used or the word “approximately” added;
- (6) On the serological detection section, a paragraph for sample preparation is needed. Also, it needs to review and consider if there is a commercial antibody/kit for DAS-ELISA for plant tissue material and then include into the draft DP;
- (7) For the immunofluorescence (IF) technique, it should include the brand name of the antiserum since it refers to a commercially available antiserum in the draft DP;
- (8) Editorial changes in sections names are needed to make the text in a chronological order. For example, under molecular detection section, the first subsection should be “DNA extraction from infected citrus tissue” and the next subsection “conventional PCR”;
- (9) For molecular detection section, the primers *loci* target should always be mentioned;
- (10) There needs to be a review on the primers set since the *Xanthomonas* taxonomic changes were made. It needs to confirm that sets of primers described in the draft DP can detect other *Xanthomonas* besides *X. citri* subsp. *Citri*, which would cause false positive detection;
- (11) It was recommended to check the references on sensitive detection of the colony-forming unit (CFU) of *X. citri* subsp. *citri*;
- (12) On whether there is a Loop-mediated Isothermal Amplification (LAMP) method available and if it should be included in the draft DP, it was agreed that it was the author’s decision. To progress with the draft, this method will not be included. The discipline lead will check with the lead author if there is a LAMP method available and validated to be included in the protocol;
- (13) Pathogenicity tests are usually done as an identification test. For this DP, the pathogenicity test can be used for screening, thus, for detection and also for identification. For this, the section name should be changed to “Bioassays”;
- (14) The identification section needs to be reviewed regarding the minimum requirements and the circumstances under which the requirements might be used;
- (15) In the text, the methods for minimum requirements for identification should come first and then the additional methods in a separate subsection;

- (16) Under the molecular identification section, the text needs to be adjusted to ensure the new taxonomy is clarified;
- (17) On DNA fingerprinting detection, it may need specific extraction (need higher quality DNA) and that may be the reason there is a specific extraction in this section. Thus, for the conventional PCR section, an extraction process from bacteria colony needs to be included;
- (18) Under the records section, specific elements to be recorded should be included. To have the draft DPs in a harmonized format, the *Erwinia* draft DP should be taken as an example.

The TPDP agreed that:

- The discipline lead will inform the lead author on *Xanthomonas citri* subsp. *citri* (topic number 2004-011) of the discussion and of the changes needed to the draft and will work with the DP drafting group to prepare a draft by 15 January.

#### **7.4 Draft DP: *Sorghum halepense* (2006-027)**

The botany discipline lead, presented the protocol and noted comments for consideration with the DP drafting group. The discipline lead mentioned that ring tests, to validate some molecular tests, were being made in China. The validation data may be available by January 2013, and the results of the ring tests will then be published. Molecular detection methods are needed in this protocol as many different commodities contain seeds and identification cannot rely only on morphological methods. The main TPDP comments were as follows:

- (1) Avoid Standard Operational Procedure (SOP) format;
- (2) Information on molecular controls, interpretation of the results and identification of the species are needed, with appropriate references;
- (3) Identification keys need to be more illustrative with more details;
- (4) Justification for sampling should be given;
- (5) Specificity data for the methods described is missing. It needs to include this information in the draft DP;
- (6) The text and diagram should be aligned.
- (7) The TPDP agreed that this draft DP needs to be redrafted before being subject to the expert consultation on the IPP.

The TPDP agreed that:

- The discipline lead will inform the lead author on *Sorghum halepense* (topic number 2006-027) DP of the discussion and the necessity to work with the DP drafting group to prepare a revised draft by April 2013 (detailed timing is indicated in the work plan in Appendix 8 to this report).
- The draft DP may be subject to expert consultation on the IPP by September-October 2013.

## **8. QA issues related to DPs**

### **8.1 Use of the terms analytical/diagnostic specificity and sensitivity, reliability and reproducibility, validation of methods, ring testing**

Quality Assurance (QA) issues related to DPs has been discussed in previous TPDP meetings (2008; 2010). A document, developed by a TPDP member, was reviewed and commented upon by the TPDP in previous meetings, but no modifications were made following the 2010 TPDP meeting. The TPDP noted that this document is intended as an internal document for use by the TPDP regarding terminology. The main points of discussion by the panel were as follows:

- (1) In the development of a DP, it is necessary to take into account the geographical diversity of the pest. Hence, there needs to be a rewording on whether or not the validation of a newly developed DP should also take place in the country where the pest originated;

- (2) Regarding validation of a test, discussion was made on whom should perform this validation. It was mentioned that validation needs sensitivity and specificity for publication and the laboratory that develops a test does not necessarily need to validate it;
- (3) The use of terms should always be harmonized with IPPC terms;
- (4) The terms accreditation, certification and licensing are not part of an IPPC DP. It is a QA issue, but it is not directly relevant to the IPPC process;
- (5) The steward pointed out that accreditation is not in a DP or IPPC scope and it is not a requirement to be accredited to ISO before the implementation of a DP;
- (6) Information on molecular testing controls should be included.

The TPDP agreed that:

- The to request a small working group of TPDP members redraft the document on Quality Assurance issues related to DPs and request the redraft to be submitted to the Secretariat by 10 May for presentation to the TPDP 2013 meeting.

## 9. Priorities for new protocols and further work

### *Consideration of proposals in 2007 call, as requested by SC (Anguina spp., Conotrachelus nenuphar, Phoma exigua var. foveata)*

Three subjects for DPs, *Anguina* spp. (nematode), *Conotrachelus nenuphar* (insect) and *Phoma exigua* var. *foveata* (fungus) were proposed in the 2007 IPPC call for topics. The SC had asked the TPDP to review these proposals and provide recommendation to the SC. The discipline leads had applied the criteria for the prioritisation of DPs to the three pests and prepared a conclusion to be presented at the next SC meeting.

The TPDP supported the addition of *Anguina* spp. and *Conotrachelus nenuphar* to the List of topics for IPPC standards, as supported in Appendix 12 to this report.

Regarding *Boeremia foveata* (syn. *Phoma foveata*, *Phoma exigua* var. *foveata*) several members supported that addition of this topic to the TPDP work programme was not needed as it is a well-managed fungus, and not as important as some other potato diseases. However, two members supported that a DP should be developed particularly because this pathogen is regulated in South America for potatoes from Europe. There was no consensus on this subject, and it will be discussed again in the next TPDP meeting. The table below summarizes the TPDP decisions.

**Table 5.** Summary on consideration of proposals in 2007 call, as requested by SC

Discipline (topic number)	Diagnostic Protocol	Proposed DP (Y/N)	Proposed priority
Nematodes (2006-008)	<i>Anguina</i> spp.	Yes	3
Insects and mites (2006-007)	<i>Conotrachelus nenuphar</i>	Yes	2
Fungi and fungus-like organisms (2006-006)	<i>Boeremia foveata</i> (syn. <i>Phoma foveata</i> , <i>Phoma exigua</i> var. <i>foveata</i> )	No consensus	-

### *Discussion of proposals for 2013 call*

Addressed in the section below.

### *Suggestions for further work*

The TPDP agreed that, within *Liberibacter* spp., *Liberibacter solanacearum* should be added in the work plan with working priority 1. This new topic proposition will be addressed to the SC in the next SC meeting.

Some members suggested the inclusion of new DP under Insects and mites discipline for the potato psyllid *Bactericera cockerelli*, which is the vector for *Liberibacter solanacearum*, and with working priority as 1. However, the TPDP decided that more clarification on this subject was needed as well as evaluation against the criteria of DP prioritisation. This proposal will be discussed in the next TPDP meeting.

The TPDP agreed:

- To invite the SC to add the following subjects to the *List of topics for IPPC standards* (see appendix 12 of this report):
  - *Anguina* spp. (nematode) with priority 3;
  - *Conotrachelus nenuphar* (insect) with priority 2;
- To invite the SC to note the subject *Boeremia foveata* (syn. *Phoma foveata*, *Phoma exigua* var. *foveata*) will be discussed again at the next TPDP meeting;
- To invite the SC to add the subject *Liberibacter solanacearum* (Bacteria) to the *List of topics for IPPC standards* with priority 1.
- That the discipline lead for entomology, Mr Norman Barr, will evaluate *Bactericera cockerelli* against the criteria of DP prioritisation and will present it in the next TPDP meeting.

## 10. Update on the work of other organisations

### ISO (especially regarding draft ISO standard 13484)

An update on this subject was provided by a TPDP member. It was mentioned that the IPPC Secretariat is now observer on the ISO subcommittee on the draft ISO standard 13484 and had compiled comments from TPDP members and submitted them to the ISO when it was subject to the vote of countries. Several countries had voted against the standard and numerous comments had been received. The lead for this ISO draft standard has resigned and a call will be performed. The SC agreed that the TPDP continues to monitor the work of the sub-committee on relevant draft ISPMs and report to the SC on proposed comments. This activity, therefore, continues. The discipline lead for virology, Mr Delano James, will continue to follow up on the activities of the Sub-Committee and communicate items of relevance to the TPDP.

### CBOL, QBOL-EPPO Conference

Recommendations from the [Quarantine Organisms Barcode of Life](#) (QBOL) – EPPO Conference were presented to the TPDP. QBOL is a European Union-funded three year project for developing molecular barcoding methods for quarantine organism characterization. Several molecular methods and protocols were developed, and in May 2012 a final meeting was held on this project. He also explained that QBank started as a project to bring together molecular and morphological data on quarantine organisms. QBOL information (e.g. sequences) was added to QBank and the information in QBank is linked to GeneBank/NCBI.

### Global Taxonomy Initiative (GTI)

A document was provided by the Secretariat of the GTI. There was no time to discuss this issue and was deferred to the next TPDP meeting.

## 11. Analysis of roles and functioning of the TPDP (e.g. members, editorial teams, secretariat, steward, actions in relation to development of protocols, member comments) and possible improvements

The document was introduced by the IPPC Secretariat. The need for discussion on how to improve the development of DPs has been raised by TPDP members on many occasions. The document presented ideas expressed by TPDP members by email since the last meeting, suggestions made from other

groups, and questions and items from the IPPC Secretariat on how to streamline and improve the process. The document presented a few issues regarding the standard setting process itself, but focused more on the operation and work of the TPDP and drafting teams.

The Secretariat and Steward noted that the expert consultation on draft DPs on the IPP and the fact that the SC was now adopting DPs on behalf of the CPM should already improve the system, although these two elements have not been used in practice yet.

One member, although recognizing that the process needed to be improved, recalled that one reason why progress had been slow was that the TPDP had been encouraged to not develop protocols too fast. There was a limit to the number of protocols that could be sent for member consultation each year because of IPPC Secretariat and country resources. Therefore, in the past, the TPDP did not push some of the DPs because they would not be taken forward.

#### ***Improvements to the DPs development process:***

- (1) DP drafting groups: In some cases the discipline leads know some people more experienced as authors than the ones nominated in response to the call for authors. The TPDP recognized the need for transparency in the selection of authors and co-authors and also a balance of these experts between regions, but agreed that discipline leads could suggest authors and co-authors (after having verified that they are available to perform the tasks involved). This was added to the instructions to authors;
- (2) The TPDP agreed that subjects that are no longer relevant or of which no progress can be made, should be recommend for deletion by the TPDP from the *List of topics for IPPC standards*. Additionally, if a draft DP is not available after 2 years, despite appropriate communication between the discipline lead and the DP drafting group, the DP drafting group should be changed. These changes and reasons for them should be transparent;
- (3) A timeline of 6-12 months for the first draft was agreed by the TPDP. Within 3 months, the lead author and discipline lead should produce a schedule for the development of the protocol.

#### ***Participations of experts***

- (1) The TPDP recognized that everyone is busy and that for the first year the work is more intensive and then subsequently more sporadic. Once the authors and co-authors are part of the DP drafting group, they are responsible as a team for the development of the protocol according to the proposed schedule and proper time for this work must be allocated;
- (2) The fact that there may be an existing regional protocols for the same pest that the IPPC is developing a DP for was raised. It was necessary to make sure that experts that have already been involved in the development of a regional protocol are also involved in the DP drafting group or at least have input, where possible;
- (3) Even though this type of expert work is on a volunteer basis, there is still an expectation that the authors and co-authors are able to allocate the appropriate amount of time, as this is specifically highlighted in the call letter. In addition, the author's employer should be aware of the commitment and even consider including this work in the author's performance review. In addition, it is important to keep volunteers motivated, e.g. a letter from the IPPC Secretariat thanking volunteers could be a good motivator. This could also be done for experts solicited to send comments (a letter to invite them to participate, if requested from the discipline lead – see agenda item 5.1), and to authors and co-authors in a DP drafting group with a copy to their NPPOs (e.g. when the draft is ready for member consultation (new), and after adoption (as currently done)). Other methods for motivating authors and co-authors could include an acknowledgement letter or the creation of an IPPC database of diagnostic experts which would include author's names and a description of their expertise. The Secretariat noted this could be a lot of additional work and resources to do this may be limited;
- (4) A statement of commitment, including the supervisor's signature, although requested in the call for authors, the Secretariat should insist it be submitted by each member of the DP drafting group. This was added to the working procedures;

- (5) Authors and co-authors of the DP drafting group could be invited to help train laboratory staff and participate in inter-laboratory testing of methods after each DP has been adopted;
- (6) A flow chart should be developed to illustrate the development process and expected development time to authors and co-authors;
- (7) A summarized status of the protocol should be publicly available on the IPP, indicating the names and contact information for discipline leads, referees and DP drafting group members. The provisional adoption date could be indicated on the IPPC List of topics for IPPC standards;
- (8) It was noted that Eppo has good videoconference facilities, and this may allow the participation of more DP drafting team experts in TPDP meetings, as currently only those in the region where the meeting is organized are invited.

#### ***Improving the operation of the TPDP as a group***

The proposed standardized format for DPs and virtual meetings should address these points (see agenda item 5.5 and 5.7).

#### ***Facilitating the work of TPDP members in charge of specific protocols***

Succession in the TPDP: it is important to have an overlap between discipline leads activities of terms to transfer the expertise. The IPPC Secretariat should be given the latest draft DPs when the discipline leads leave and be responsible for transferring information to the new TPDP member. An area on the IPP/TPDP work area could be created for this purpose.

### **12. Work plan for 2012-2013**

The TPDP 2012-2013 work plan was presented by the IPPC Secretariat and modified during session. The work plan for 2012-2013-2014 is as Appendix 8 of this report.

### **13. Date and location of next meeting: Eppo headquarters, Paris, France.**

The next TPDP meeting will be hosted at Eppo headquarters. It was agreed that the next TPDP meeting will be in 24-28 June, 2013.

### **14. Close**

On behalf of the TPDP, the Chair thanked Mr Mallik Malipatil for his participation and work in the TPDP since its creation. She looked forward to his continuous involvement once he continues with the panel activities as author and referee for some diagnostic protocols. Mr Mallik Malipatil thanked the IPPC Secretariat Standard Setting Officer, Mr Brent Larson, and the Steward, Ms Jane Chard, who have been very supportive. He also thanked the discipline leads for entomology, specially Ms Ana Lía Terra for her work and all the TPDP members.

The IPPC Secretariat thanked the whole panel and the Chair for their work. The Secretariat also thanked the Eppo Secretariat for hosting the TPDP meeting and the excellent arrangements made for this meeting. The Steward thanked all participants for their efforts.

**Appendix 1 - Agenda**

<b>AGENDA ITEM</b>	<b>DOCUMENT NO.</b>	<b>PRESENTER</b>
<b>1. Opening of the meeting</b>	-	IPPC Secretariat
1.1 Welcome	-	EPPO Secretariat
1.2 Welcome to new members and introductions	-	IPPC Secretariat
1.3 Brief presentation on the IPPC, TPDP and roles of participants	-	IPPC Secretariat
1.4 Selection of the Chair and Rapporteur	-	IPPC Secretariat
1.5 Review and adoption of the agenda	TPDP_2012_Nov_01	Chair
1.6 Current specification for the TPDP	TPDP_2012_Nov_05rev	Steward
<b>2. Administrative Matters</b>	-	
2.1 Local information	TPDP_2012_Nov_04	EPPO Secretariat
2.2 Documents list	TPDP_2012_Nov_02	IPPC Secretariat
2.3 Participants list	TPDP_2012_Nov_03	IPPC Secretariat
<b>3. Reports</b>	-	
3.1 Previous meetings of the TPDP (July 2010)	<a href="https://www.ippc.int/index.php?id=1110710">https://www.ippc.int/index.php?id=1110710</a>	Steward
3.2 TPDP intersession work: 2010-08 to 2012-10	TPDP_2012_Nov_28	IPPC Secretariat
3.3 Extracts from other meeting reports of relevance to the TPDP (SC Nov 2010, CPM-6, SC May 2011, SC Nov 2011; CPM-7, SC May 2012) - Items of relevance from the SC meeting on 12-16 November 2012	TPDP_2012_Nov_13 TPDP_2012_Nov_35	IPPC Secretariat Steward
3.4 Current work plan Changes to the TPDP 2010 work plan, resulting from decisions of the SC and CPM after that date will be outlined. The work plan will be updated during the meeting (ag. item 12)	TPDP_2012_Nov_27	IPPC Secretariat
<b>4. Procedures related to TPs (for information)</b>	TPDP_2012_Nov_07	IPPC Secretariat
<b>5. Procedures and guidance related to TPDP (including consideration of the need for revision)</b>	-	
5.1 TPDP procedure: Working procedure	TPDP_2012_Nov_08	IPPC Secretariat, Steward
5.2 TPDP procedure: Instructions for authors	TPDP_2012_Nov_09	IPPC Secretariat, Steward
5.3 TPDP procedure: Checklist for discipline leads and referees	TPDP_2012_Nov_10	IPPC Secretariat, Steward
5.4 TPDP procedure: Criteria for prioritization of protocols	TPDP_2012_Nov_11	IPPC Secretariat, Steward
5.5 TPDP procedure: Draft check list for authors	TPDP_2012_Nov_36	Hans de Gruyter

AGENDA ITEM	DOCUMENT NO.	PRESENTER
5.6 Draft standardized format for protocols - EPPO instructions to authors of diagnostic protocols	TPDP_2012_Nov_15 TPDP_2012_Nov_33	IPPC Secretariat EPPO Secretariat
5.7 Improvements to the standard setting process including: - CPM decisions - suggestions by the SC - use of new tools (expert consultation on the IPP, virtual TPDP meeting) <i>Note: some items are also covered in TPDP_2012_Nov_31, ag. item 11</i>	In TPDP_2012_Nov_13 In TPDP_2012_Nov_13 TPDP_2012_Nov_30	IPPC Secretariat, Steward
<b>6. Update on the development of diagnostic protocols</b>	-	
6.1 General overview and reports on individual DPs by discipline leads, and review of working priorities - Status of protocols - Review of working priorities	TPDP_2012_Nov_25 TPDP_2012_Nov_26	Discipline leads, IPPC Secretariat, Steward
6.2 Specific discussions on the scope of protocols. The TPDP should discuss the scope of the following DPs and, as necessary, make proposals to the SC on how the scopes should be adjusted. - viruses transmitted by <i>Bemisia tabaci</i> - <i>Tospoviruses</i> - <i>T. controversa</i> in work programme subject: “ <i>Tilletia indica</i> and <i>T. controversa</i> ” - <i>Gymnosporangium</i> spp. - Interaction between Tephritidae molecular protocol; <i>Bactrocera dorsalis</i> ; <i>Anastrepha</i> - <i>Dendroctonus ponderosae</i>	TPDP_2012_Nov_06 See in TPDP_2012_Nov_25 - See in TPDP_2012_Nov_25  See in TPDP_2012_Nov_25	Discipline leads, IPPC Secretariat, Steward  Delano James Delano James Hans de Gruyter Hans de Gruyter Ana Lía Terra/ Mallik Malipatil /N Barr
6.3 Review of experts associated with the work programme - Transfer of protocols to new TPDP members - Assignment of referees for protocols expected to be completed in 2012-2013 (to be discussed after point 7) - Update of authors and editorial teams information, including approval of new nominations, and consideration of need for additional/new authors for certain protocols	TPDP_2012_Nov_38	IPPC Secretariat  Discipline leads
<b>7. Scrutiny of draft diagnostic protocols</b>		
7.1 Draft DP: <i>Potato spindle tuber viroid</i> Proposed Figure 2 and Table 2 Checklists by discipline lead and referee (with lead author comments) Additional method	TPDP_2012_Nov_17 TPDP_2012_Nov_18 TPDP_2012_Nov_19 TPDP_2012_Nov_34	Colin Jeffries/ Delano James
7.2 Draft DP: <i>Erwinia amylovora</i> Checklist by discipline lead Proposed revised flow charts	TPDP_2012_Nov_20 TPDP_2012_Nov_21 TPDP_2012_Nov_29	Delano James

AGENDA ITEM	DOCUMENT NO.	PRESENTER
7.3 Draft DP: <i>Xanthomonas citri</i> subsp. <i>citri</i> Figures Checklist by discipline lead  Possibly also: - <i>Sorghum halepense</i> - Tospoviruses (preliminary, also in relation to discussion in 6.2 above) - Phytoplasmas (preliminary, also in relation to discussion in 6.1 above)	TPDP_2012_Nov_22 TPDP_2012_Nov_23 TPDP_2012_Nov_24   TPDP_2012_Nov_37	Robert Taylor      Yin Liping
<b>8. QA issues related to DPs</b>	-	
8.1 Use of the terms analytical/diagnostic specificity and sensitivity, reliability and reproducibility, validation of methods, ring testing	TPDP_2012_Nov_14	Mallik Malipatil
<b>9. Priorities for new protocols and further work</b> - Consideration of proposals in 2007 call, as requested by SC ( <i>Anguina</i> spp., <i>Conotrachelus nenuphar</i> , <i>Phoma exigua</i> var. <i>foveata</i> ) - Discussion of proposals for 2013 call - Suggestions for further work	TPDP_2012_Nov_12 - -	G Anthoine, AL Terra, H de Gruyter Steward, IPPC Secretariat All
<b>10. Update on the work of other organisations</b> - ISO (especially regarding draft ISO standard 13484) - CBOL, QBOL-EPPO Conference - Global Taxonomy Initiative (GTI)	- TPDP_2012_Nov_16 TPDP_2012_Nov_32	IPPC Secretariat / Delano James IPPC Secretariat, H de Gruyter, Norman Barr
<b>11. Analysis of roles and functioning of the TPDP (e.g. members, editorial teams, secretariat, steward, actions in relation to development of protocols, member comments) and possible improvements</b>	TPDP_2012_Nov_31	IPPC Secretariat, Steward, all
<b>12. Work plan for 2012-2013</b>	To be prepared during the meeting	IPPC Secretariat
<b>13. Date and location of next meeting:</b> EPPO headquarters, Paris, France. Tentative dates: 10-14 June 2013	-	-

**Appendix 2 – Documents List (by document number)**

DOCUMENT NO.	AGENDA ITEM	DOCUMENT TITLE	DATE POSTED / DISTRIBUTED
TPDP_2012_Nov_01	1.5	Provisional Agenda	2012-11-09
TPDP_2012_Nov_02	2.2	Documents list	2012-11-09
TPDP_2012_Nov_03	2.3	Participants list	2012-11-09
TPDP_2012_Nov_04	2.1	Local information	2012-08-14
TPDP_2012_Nov_05Rev	1.6	Specification TP1 rev. 3 for TPDP	2012-08-24
TPDP_2012_Nov_06	6.2	Discussion paper: Scope of a diagnostic protocol for viruses transmitted by <i>Bemisia tabaci</i>	2012-08-14
TPDP_2012_Nov_07	4	Common procedures for technical panels	2012-08-14
TPDP_2012_Nov_08	5.1	TPDP Procedure: Working procedures	2012-08-24
TPDP_2012_Nov_09	5.2	TPDP Procedure: Instructions to authors	2012-08-24
TPDP_2012_Nov_10	5.3	TPDP Procedures: checklist for discipline leads and referees	2012-08-24
TPDP_2012_Nov_11	5.4	TPDP Procedures: criteria for the prioritisation of DPs	2012-08-24
TPDP_2012_Nov_12	9	Proposals in 2007 call: <i>Anguina</i> spp., <i>Conotrachelus nenuphar</i> , <i>Phoma exigua</i> var. <i>foveata</i>	2012-08-24
TPDP_2012_Nov_13	3.3	Extracts from meeting reports	2012-08-24
TPDP_2012_Nov_14	8.1	Quality assurance issues associated with DPs for regulated pests	2012-09-26
TPDP_2012_Nov_15	5.6	Draft standardized format for protocols	2012-09-26
TPDP_2012_Nov_16	10	QBOL-EPPO Conference	2012-09-26
TPDP_2012_Nov_17	7.1	Draft DP on <i>Potato spindle tuber viroid</i> (2006-022)	2012-09-26
TPDP_2012_Nov_18	7.1	Draft DP on <i>Potato spindle tuber viroid</i> – proposed Figure 2 and Table 2	2012-09-26
TPDP_2012_Nov_19	7.1	Draft DP on <i>Potato spindle tuber viroid</i> – Checklist by discipline lead and referee (with lead author comments)	2012-09-26
TPDP_2012_Nov_20	7.2	Draft DP on <i>Erwinia amylovora</i> (Burrill) Winslow <i>et al.</i> (2004-009)	2012-10-08
TPDP_2012_Nov_21	7.2	Draft DP on <i>Erwinia amylovora</i> (Burrill) Winslow <i>et al.</i> (2004-009) – checklist by discipline lead	2012-10-08
TPDP_2012_Nov_22	7.3	Draft DP on <i>Xanthomonas citri</i> subsp. <i>citri</i>	2012-10-08
TPDP_2012_Nov_23	7.3	Draft DP on <i>Xanthomonas citri</i> subsp. <i>citri</i> : figures	2012-10-08
TPDP_2012_Nov_24	7.3	Draft DP on <i>Xanthomonas citri</i> subsp. <i>citri</i> : checklist by discipline lead	2012-10-08

DOCUMENT NO.	AGENDA ITEM	DOCUMENT TITLE	DATE POSTED / DISTRIBUTED
TPDP_2012_Nov_25	6.1	Status of IPPC diagnostic protocols (including contact details of authors) (Last update: 3 October 2012)	2012-10-08
TPDP_2012_Nov_26	6.1	Review of working priorities: TPDP review of subjects against the criteria for the prioritisation of DPs	2012-10-08
TPDP_2012_Nov_27	3.4	TPDP Work plan 2011-2012 (updated 06-10-2012)	2012-10-08
TPDP_2012_Nov_28	3.2	TPDP intersession work from August 2010 to October 2012	2012-10-08
TPDP_2012_Nov_29	7.2	Draft DP on <i>Erwinia amylovora</i> : revised flow charts	2012-11-09
TPDP_2012_Nov_30	5.7	Expert consultation system for draft diagnostic protocols on the IPP	2012-11-09
TPDP_2012_Nov_31	11	How to further improve the development of DPs	2012-11-09
TPDP_2012_Nov_32	10	Global taxonomy initiative of the CBD	2012-11-09
TPDP_2012_Nov_33	5.2 or 5.6	EPPO instructions to authors of diagnostic protocols	2012-11-09
TPDP_2012_Nov_34	7.1	Draft DP on Potato spindle tuber viroid - additional method	2012-11-09
TPDP_2012_Nov_35	3.3	Items of relevance from the SC meeting on 12-16 November 2012	2012-11-22
TPDP_2012_Nov_36	5.5	Checklist for authors	2012-11-25
TPDP_2012_Nov_37	7.3	Draft DP on <i>Sorghum halepense</i>	2012-11-25
TPDP_2012_Nov_38	6.3	Summary of nominations for <i>Ips</i> spp. and <i>Dendroctonus ponderosae</i>	2012-11-25

**Appendix 3 – Participants List and contact information**

	Participant role	Name, mailing, address, telephone	Email address	Term begins	Term ends
<b>TPDP members</b>					
✓	Steward	Ms Jane Chard SASA, Scottish Government Roddinglaw Road Edinburgh EH12 9FJ United Kingdom Tel: (+44) 131 2448863 Fax: +44 131 2448940	jane.chard@sasa.gsi.gov.uk		
✓	Bacteriology	Mr Robert Taylor MAF Biosecurity New Zealand, New Zealand Ministry of Agriculture and Forestry (MAFBNZ) 231 Morrin Road St Johns PO Box 2095 Auckland 1140 New Zealand Tel: (+64) 9 909 3548 Fax: (+64) 9 909 5739	Robert.Taylor@maf.govt.nz	May 2011	May 2016
✓	Botany	Ms Liping Yin Plant Quarantine Laboratory Animal and Plant Inspection and Quarantine Technology Center Shanghai Entry-Exit Inspection and Quarantine Bureau 1208 Minsheng Road Shanghai, 200135 China Tel: (+86) 21 6854 6481 Fax: (+86) 21 6854 6481	yinlp@shciq.gov.cn; yinliping@yahoo.com	April 2008	April 2013 (2nd term 2013-2018)
✓	Entomology	Ms Ana Lía Terra Director, Biological Laboratories Ministry of Livestock, Agriculture and Fisheries Agricultural Services General Directorate DLB DGSSAA MGAP Av. Millán 4703 Montevideo, CP.12900 Uruguay Tel: (+598) 2 304 3992 Fax: (+598) 2 304 3992	aterra@mgap.gub.uy; alt2912@live.com	April 2008	April 2013 (2nd term 2013-2018)

	Participant role	Name, mailing, address, telephone	Email address	Term begins	Term ends
<b>TPDP members</b>					
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	Participant role	Name, mailing, address, telephone	Email address	Term begins	Term ends
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## Appendix 4 – TPDP Intersession Work Report

### TPDP INTERSESSION WORK FROM AUGUST 2010 TO OCTOBER 2012

This is a brief report prepared by the Secretariat on the main intersession activities since the last Technical panel on Diagnostic Protocols (TPDP) meeting in July 2010. It focuses on TPDP activities in which the Secretariat was involved, i.e. it does not cover the work of discipline leads and drafting teams on individual protocols at early stages of development.

#### CONTENTS

Appendix 4 – TPDP Intersession Work Report .....	36
1. Activities relating to DPs .....	36
1.1 Work on individual DPs at advanced stages of development in 2010-2012 .....	36
1.2 Review of working priorities .....	37
1.3 Update on the status of protocols .....	37
1.4 Verification relating to authors and changes in drafting teams .....	37
1.5 Review of new subjects .....	38
2. Issues related to meeting organisation.....	38
3. Composition of the TPDP .....	38
4. New activity: draft ISO standards of the ISO Subcommittee TC 034 ("food products") / SC16 on "horizontal methods for molecular biomarker analysis" .....	39
5. Development of the expert consultation system on the IPP .....	40
6. Presentations on IPPC activities on diagnostic protocols .....	40
7. Information circulated by the Secretariat .....	40

#### 1. Activities relating to DPs

In the absence of a meeting in 2011, work on diagnostic protocols (DPs) continued at a slower pace. Discipline leads continued to work with lead authors and editorial teams by email. The Secretariat was not directly involved in most of these exchanges, but updates on the status of protocols were sought regularly. The review of working priorities was also started, as well as the review of three proposed new subjects for DPs.

##### 1.1 Work on individual DPs at advanced stages of development in 2010-2012

###### *Trogoderma granarium* and *Plum pox virus* – adopted 2012

In 2011-06, the draft DP on *Trogoderma granarium* was sent for member consultation. A redraft and responses to comments prepared by the author, editorial team and discipline lead were submitted to the TPDP in 2011-11.

The draft on *Plum pox virus* had been sent for member consultation in 2010, but comments could be considered only in 2011 as the lead author was not available during a long period. A redraft and responses to comments prepared by the author, editorial team and discipline lead were submitted to the TPDP in 2011-08.

In both cases, the discipline leads and authors reviewed TPDP comments, and final drafts and responses to comments were presented to the Standards Committee (SC). The opinion of the TPDP was sought at different occasions through to adoption by the Commission of Phytosanitary Measures (CPM-7) in March 2012, including suggestions made just before or at the CPM meeting.

Discipline leads, authors, editorial teams and TPDP members have to perform the review of comments and finalization of draft DPs in a short time in order to meet the SC and CPM deadlines. The Secretariat and steward always try to emphasize to the SC the enthusiasm that should be involved in finalizing DPs and ensuring that they are not delayed by one year.

### ***Tilletia indica* and *Guignardia citricarpa* – Member Consultation (MC) in 2012**

The drafts were finalized following discussions at the 2010 TPDP meeting, and sent to the TPDP for comment. Revised drafts were then submitted to the SC, which approved them for member consultation in 2011-11. The SC subsequently decided to send these draft for member consultation in 2012-07. Comments are due by 2012-10.

## **1.2 Review of working priorities**

Based on criteria supported by the SC at its November 2011 meeting, the Secretariat launched the review of working priorities in March 2012, with the expectation to present proposals to the SC at its April 2012 meeting. This was not possible as some but not all answers were received by the deadline, and the review of working priorities was subsequently added to the agenda of the November 2012 meeting. The paper was complete in September.

## **1.3 Update on the status of protocols**

At its 2010 meeting, the TPDP decided that such updates should be requested by the Secretariat 4 times a year. The Secretariat therefore circulated the status of protocols document to TPDP members to be updated at several occasions, and integrated TPDP members' comments. Updates were due at 2010-10-15, 2011-01-15, 2011-04-30; 2011-08-30; 2012-03-15. 2012-03-15 was the last attempt for update. Later updates were made by the Secretariat based on information received directly from the leads when working on individual protocols, or based on answers from authors when the Secretariat's help was requested to contact authors (for *Anoplophora* spp. and *Bursaphelenchus xylophilus*).

## **1.4 Verification relating to authors and changes in drafting teams**

Changes in lead authors or editorial team members may occur in the course of the development of a DP. The discipline lead is normally informed by the experts directly, and in turn notifies the Secretariat and the TPDP. When discipline leads were not able to establish contact with lead authors or editorial team members, despite repeated attempts, they requested Secretariat's help in verifying contact details and whether the experts were interested to continue in their roles. The Secretariat made these verifications by contacting directly the experts concerned or their NPPO. Most checks occurred at the end of 2010 and mid-2012, in relation with the DPs on:

- **2010:** *Aphelenchoides besseyi*, *A. ritzemabosi* and *A. fragariae*; *Fusarium moniliformis*; *Gymnosporangium* spp., *Puccinia psidii*; Tospoviruses.
- **2012:** *Striga* spp.; *Aphelenchoides besseyi*, *A. ritzemabosi* and *A. fragariae*; *Ips* spp.; *Dendroctonus ponderosae*; *Anoplophora*.

In most cases, the difficulties arose from changes in email addresses. In a few cases, the authors were not able to continue in their role (retirement, no time etc.).

The only check that resulted (so far) in the need for a call for authors was in relation to the protocols on *Ips* spp. and *Dendroctonus ponderosae*. The TPDP lead asked for Secretariat's assistance already in 2010 to confirm the status of the lead author, but despite contacts with the NPPO it is only in 2012 that the resignation of the lead author was confirmed. A call for experts for *Ips* spp and *Dendroctonus ponderosae* was consequently issued in 2012-09 to complete both teams (lead author and possibly editorial team member(s) for *Ips* spp.; editorial team member(s) for *Dendroctonus ponderosae*).

Resignations of experts are shown directly in the status of protocols document (posted in the TPDP restricted work area on the IPP), and the TPDP was not informed directly as no validation was needed. The TPDP was informed by email of the following changes of lead authors and additions to editorial teams:

- **2010-09.** *Phytophthora ramorum*. The editorial team member Paul Beales agreed to take the lead of that DP, while the former lead author Kelvin Hughes (GBR) moved to the editorial team.
- **2011-11.** Phytoplasmas. The editorial team member Lia Liefing (NZL) agreed to take the lead of that DP following the resignation of the lead author.
- **2012-07.** *Aphelenchoides besseyi*, *A. ritzemabosi* and *A. fragariae*. The editorial team member Fengru Zhang (USA) agreed to take the lead of that DP following the resignation of the lead author.
- **2012-07.** *Dendroctonus ponderosae*. The editorial team member Linda Semeraro (AUS) agreed to take the lead of that DP following the resignation of the lead author.
- **2012-08.** *Bursaphelenchus xylophilus*. Géraldine Anthoine (FRA) was added as editorial team member.

The TPDP was also reminded in 2012 that changes in a lead author or additional expert in an editorial team need to be communicated to the TPDP.

Note: in September 2012, the Secretariat prepared a paper for the Strategic Planning Group (SPG) on engaging and motivating members in the standard setting process, and this addressed some issues arising in the development of diagnostic protocols.

### 1.5 Review of new subjects

In 2012-03, the Secretariat asked the three discipline leads concerned to review three subjects against the criteria to decide whether to recommend additions to the work programme. *Anguina* spp., *Conotrachelus nenuphar*, *Phoma exigua* var. *foveata*. It was later decided that the proposals would be discussed at the November 2012 meeting.

## 2. Issues related to meeting organisation

- **2010-10.** The Secretariat consulted the TPDP on UK lead authors/editorial teams members, in view of a possible TPDP meeting in UK in 2011. The information obtained was not used. Firstly in 2010-12, the Secretariat informed the TPDP that the 2011 meeting was cancelled due to shortage of resources. Secondly in 2011-10, EPPO offered to host the next three meetings of the TPDP at its headquarters in Paris (this should normally cover the period 2012-2014, provided no meeting is cancelled due to lack of resources).
- The 2012 meeting was scheduled on 26-30 November, and the 2013 meeting, tentatively, on 10-14 June 2013.
- **2011-09.** The Secretariat consulted the TPDP on two possible invited experts for the 2012 TPDP meeting: Mr Colin Jeffries for *Potato spindle tuber viroid* (PSTVd) and Ms Maria Lopez for *Erwinia amylovora*. Approval from the SC was then sought.

## 3. Composition of the TPDP

Several members joined the TPDP or resigned since the 2010 TPDP meeting, and the TPDP was also consulted as a group on several issues related to the membership.

- **2010-11.** The SC confirmed Delano James (CAN) as new TPDP member for virology. He took the lead for the DPs on *Erwinia amylovora* (as decided at the 2010 TPDP meeting due to the vacant position in bacteriology) and PSTVd (as proposed by the discipline lead of virology at the time, Gerard Clover, New Zealand).
- **2010-11.** The SC designated Jane Chard (GBR) as TPDP Steward in replacement of Jens Unger (DEN).

- **2011-05.** Gerard Clover (virology, NZL) resigned from the TPDP and Robert Taylor (NZL) was selected as the new TPDP discipline lead for bacteriology.
- **2011-08.** The Secretariat consulted the members whose terms expire in 2013 on their wish and possibility to continue in the TPDP. This was following a SC request that a strategy for membership should be proposed for each TP, as the terms of many TP members expire in 2013. Such strategy should ensure continuity of TP membership while replacing some members. Some members confirmed their second term for the panel membership and while Mr Mallik Malipatil (AUS) decided to stop in 2013 in order to create an opportunity for a new member to serve on the panel.
- **2011-09.** Consequently, the Secretariat asked the TPDP on views regarding the composition of the group and future needs, in order to present a strategy to the SC. The TPDP agreed that Ana Lía Terra (URY), Hans de Gruyter (NLD) and Yin Liping (CHN) be proposed for another term (2013-2018). Several proposals were received relating to the positions needed in the TPDP. Based on the input received, a proposal was made to the SC that two new TPDP members should be called (a molecular taxonomist with expertise in invertebrates, primarily in entomology (but also possibly acarology etc., preferably with barcoding experience)), and a virologist who could provide support for bacteria as needed, both having good experience of quality assurance. The SC agreed to the strategy and a call for experts was made in 2012-02.
- **2012-07:** Brendan Rodoni (AUS) and Norman Barr (USA) were confirmed as TPDP members for Virology and phytoplasmata and Insects and mites, respectively.

#### **4. New activity: draft ISO standards of the ISO Subcommittee TC 034 ("food products") / SC16 on "horizontal methods for molecular biomarker analysis"**

- Following the 2010 TPDP meeting, the IPPC Secretariat requested and obtained observer status in the *ISO Subcommittee TC 034 ("food products") / SC16 on "horizontal methods for molecular biomarker analysis"*. This is the subcommittee involved in the development of an ISO draft on which concerns had been expressed at the 2010 meeting: *Draft ISO/CD 13484 on General requirements for molecular biology analysis for detection and identification of destructive organisms in plants and derived products*. The first ISO consultation period was closed when the Secretariat obtained observer status, and it was not possible to raise concerns, as proposed by the TPDP in July 2010.
- CPM-6 (2011) was informed that the IPPC Secretariat had requested observer status on the Subcommittee that was reviewing this draft.
- In 2011-04, the Secretariat contacted the TPDP to seek for a volunteer to follow the activities of this subcommittee. Delano James volunteered.
- The TPDP volunteer brought to the attention of the TPDP and of the Secretariat the fact that a second consultation period had opened for the draft above in October 2011.
- Given the concerns previously expressed, which had not been resolved in the new draft, the Secretariat thought it important to seek comments from the TPDP and submit them to the ISO as an observer's contribution to the development of the standard (as already planned in 2010).
- On 2012-02-21, the Secretariat sent the draft to the TPDP, as there was a possibility to submit observer comments if necessary. Comments were requested by 1 March.
- Delano James and the Secretariat assembled the comments received, which were circulated to the TPDP on 2012-03-04, with a deadline for answer on 2012-03-08. Members that had sent comments received feedback on comments that had not been included.
- A few TPDP members disagreed with or commented on some individual comments. All comments disputed were deleted from the assembled comments.
- The comments were submitted by the Secretariat to ISO as observer comments on 2012-03-09.
- The Secretariat was not fully satisfied with the procedure followed, as there had been very limited time (the deadline for comments was 2012-03-10), and in particular no time to consult

the SC. The Secretariat was also uncertain as to the role it plays in reviewing these drafts and in turn, the role that TPDP members play (only informing contracting parties, or should the TPDP, as a group of experts, review and comment on these ISO drafts). The Secretariat sought some direction from the SC to the TPDP at its meeting in April 2012.

- The SC (details in extracts from the SC report, TPDP\_2012\_Nov\_13) noted that observer comments were made on the ISO draft 13484, and agreed to add a task to the TPDP Specification to review appropriate draft ISO standards under the Subcommittee TC34/SC16, to identify standards of significance for the IPPC, and to seek guidance from the SC on whether to provide comments to ISO. The SC also requested the Secretariat, if comments are assembled, to post these comments on the work area of the SC and invite SC members to contact the TPDP through the steward if they have issues, and to notify NPPOs and RPPOs when an ISO standard is of concern for them.
- The monitoring of draft standards by the *ISO Subcommittee TC 034/SC16* therefore continues with the provisions above.
- In June 2012, the Bureau discussed how to handle standards created by other organizations and how to prioritize issues, due to lack of resources, within the Secretariat. As a result of the discussion, the Bureau asked the Secretariat to follow up with ISO to clarify the relationship between the two organizations (as well as with other regional and private standard setting groups).

## **5. Development of the expert consultation system on the IPP**

- Following the decision of the 2010 TPDP meeting, and after validation of the idea by the SC, the Secretariat started the development an expert consultation system on the IPP.
- **2011-12.** The Secretariat asked for comments on a draft expert consultation system on the IPP.
- **2012-05.** The expert consultation system was ready following CPM, but is awaiting drafts that can be submitted to it.

## **6. Presentations on IPPC activities on diagnostic protocols**

- Presentation on IPPC activities on diagnostic protocols at the EU Meeting on reference laboratories for plant pest diagnostics and official analysis (Paris, France, 2012-03-26/27).
- Presentation on the role and activities of IPPC on diagnostic protocols during a round table organised in the framework of the 22nd International Conference on Virus and Other Transmissible Diseases of Fruit Crops (ICVF) (Rome, Italy, 2012-06-03/08).
- The IPPC Standard Setting Officer made a presentation on IPPC diagnostic protocols: underpinning global phytosanitary systems at the QBOL-EPPPO Conference on DNA barcoding and diagnostic methods for plant pests (Haarlem, NL, 2012-05-21/25).

## **7. Information circulated by the Secretariat**

- Information on the outcome of SC meetings after each meeting
- BioNET (2011-07-29)
- GTI Initiative (2011-04-17)
- An identification tool for *Xyleborini ambrosia* beetles of the world (2011-04-17)

## Appendix 5 – Working procedures

### TECHNICAL PANEL ON DIAGNOSTIC PROTOCOLS (TPDP) WORKING PROCEDURES

(Status: approved by the TPDP October 2006 (annex 3), noted by the SC May 2007, revised by the TPDP June 2008; revised by the TPDP July 2010, noted by the SC May 2011; revised by the TPDP November 2012, to be presented to the SC May 2013).

#### CONTENTS

Appendix 5 – Working procedures .....	41
Annual work programme .....	41
Nominations of experts .....	41
Expertise required for experts to draft DPs .....	42
The development of a draft DP .....	42
Changes to the DP drafting group .....	42
Assessment of draft DPs by the TPDP .....	43
Review of member comments on a draft DP .....	44
Review of published DPs .....	44
ROLE OF TPDP MEMBERS .....	45

#### Annual work programme

- The TPDP annually identifies priority subjects for diagnostic protocols (DP) taking into account guidance from the Standards Committee (SC), and any requests for reviews and amendments to a DP that have been received by TPDP members and the criteria for prioritization of DPs. The TPDP submits recommendations on subjects to the SC. National plant protection organizations (NPPOs) and regional plant protection organizations (RPPOs) may also submit subjects for a DP in response to the IPPC Secretariat's biennial call made for topics to be considered for the IPPC List of topics for IPPC standards.
- The TPDP reports annually through the Steward to the SC. This report includes the achievements during the year, proposals for subjects, a proposed work programme, report on tasks allocated by the SC, such as revision of working procedures as necessary, and other items needing SC decision.

#### Nominations of experts

- Once subjects for DPs are put on the work programme, the IPPC Secretariat issues a call requesting nominations of experts for DPs identified as priorities and posts the call on the IPP. For seed-related DPs the Secretariat also informs the International Seed Testing Association and the International Seed Federation of the call.
- The TPDP discipline leads are encouraged to notify relevant experts of the call.
- Experts are encouraged to be nominated by NPPOs or RPPOs, but all nominations will be considered
- The CVs of nominated experts are reviewed by the discipline lead taking into account the expertise required for authors for DPs (as detailed below).
- In parallel to the call, the discipline lead may identify one expert that would be essential for the development of the DP, and contact that expert to ensure his/her commitment.
- Considering nominations from the call and possibly the experts identified in parallel, the TPDP discipline lead recommends a DP drafting group, with an expert to lead the

development of a DP (lead author) and a small group of experts to assist him/her with the development (co-authors).

- This information, along with a summary of the expertise of each expert, is submitted to the TPDP, who agrees or amends the recommendations as appropriate. The list of DP drafting groups (with lead authors and co-authors) and referees is included in the TPDP report, which is presented to the SC.

### **Expertise required for experts to draft DPs**

- The DP drafting group should have appropriate global coverage.
- Authors of existing DPs, such as regional DPs, should be included in the DP drafting group, where appropriate.

#### Core expertise required:

- Diagnostic expertise with the pest.

#### Additional expertise that would be helpful:

- Taxonomy and molecular diagnostics
- Practical experience related to the pest (detection, identification, isolation etc.)
- Drafting of DPs (such as regional DPs)
- Development of novel diagnostic methods
- Experience using DPs for diagnosis of regulated pests, including in the context of international trade
- Experts associated with international seed testing organizations may be included, where considered appropriate by the TPDP.

### **The development of a draft DP**

- The lead author uses ISPM 27 (*Diagnostic Protocols for Regulated Pests*) and the *Instructions to authors of diagnostic protocols for regulated pests* to produce a first draft. Additional guidance is provided by the TPDP discipline lead if needed. The discipline lead and the lead author should, within the first 3 months, agree on a timeframe for the development of a draft (including appropriate consultation of co-authors), leading to the preparation of a first draft within the first year (max. 6-12 months).
- The lead author is assisted in the preparation of the DP by the co-authors.
- Where the subject of the DP is above species level, or the scope is unclear, the discipline lead and lead author, in consultation with the co-authors, should propose amendments to the scope of the DP. The TPDP may modify the amended scope and should inform the DP drafting group. The TPDP should report on its discussions to the SC, in the report of a meeting or by email through the Secretariat.
- Where disagreement arises within a DP drafting group during preparation of a protocol, the lead author should discuss the issues with the discipline lead. The discipline lead may discuss the issues, if necessary, with the full DP drafting group in order to resolve them. The discipline lead should decide how to proceed based on scientific evidence and present a proposal to the TPDP. Once the proposal is final, it should be reported to the DP drafting group.

### **Changes to the DP drafting group**

- When an expert who has been chosen as lead author is unable to continue in this role, the TPDP discipline lead will ask a member of the DP drafting group to become the lead author. The TPDP is informed of the change of leadership.
- Where additional experts are required for the DP drafting group, the TPDP discipline lead, in consultation with the lead author, chooses from the experts nominated in the original call for authors. If no suitable experts are available, the IPPC Secretariat is requested to seek new nominations for the DP by announcing the vacancy on the IPP, with a 30 day deadline for

receipt of CVs. The TPDP discipline lead or DP drafting group may also notify relevant experts of the call. The TPDP discipline lead reviews the CVs and submits a recommendation of an expert, along with a summary of their expertise to the TPDP, who reviews and approves the addition, which is included in the TPDP's annual report to the SC. In special circumstances (e.g. when the expertise was so small for the pest that the discipline lead was aware of all experts working on it), discipline leads might “hand-pick” an expert, and submit a recommendation to the TPDP.

- In its review of the status of protocol the TPDP also reviews the list of lead authors, co-authors and referees to identify those teams where additional authors or replacements are needed.
- When the lead author or a co-author is not answering, the discipline lead should request the Secretariat to contact the NPPO (date of the last attempt to contact the expert should be provided).

If, after all due contacts, the status of the lead author or co-author cannot be clarified and verified within 1 year of the first Secretariat's attempt, the author is withdrawn from the DP drafting group, and the Secretariat informs the discipline lead, the withdrawn author and his/her NPPO contact point.

### **Assessment of draft DPs by the TPDP**

- The lead author and co-authors discuss the draft DP (possibly involving other experts)
- Once the lead author and co-authors are satisfied with the draft DP, the lead author submits it to the TPDP discipline lead.
- The TPDP discipline lead reviews the draft DP and ensures it meets all the requirements set out by ISPM No. 27 (*Diagnostic Protocols for Regulated Pests*) instructions previously agreed to by the TPDP including the checklist for DPs.
- The discipline lead consults the lead author and co-authors to modify the draft.
- The draft DP should then be reviewed by a wider group of experts from the particular discipline related to the DP in order to ensure broad global relevance.
- The expert consultation system on the IPP is used for this purpose. The discipline lead should inform the lead author of the system, and request the Secretariat that the draft is put on the IPP publicly available for comments by experts. The process for the expert consultation on the IPP is described separately (see Expert consultation process paper). This public consultation should be advertised as provided in the process description, and the discipline lead and TPDP members have a key role in that (e.g. through scientific societies and networks, conferences). Prior to contacting individual experts to invite them to comment, the discipline lead may request to the IPPC Secretariat to provide a letter to specific individual experts inviting them to comment on the draft DP if it is felt that this will give more authority to the process.
- The draft is revised by the lead author based on expert comments, possibly based on a first compilation and analysis of the comments by the discipline lead. The lead author lists experts involved and records substantial comments that were not included in the draft.
- Once the discipline lead and lead author consider that the expert consultation has been completed the draft is submitted to the member of the TPDP identified as referee together with a list regarding consultation on the technical level (written by; reviewed by; for at which the draft was discussed) and a list of main issues discussed during the development of the draft.
- The referee reviews the draft, assembles comments using the “checklist for DP review” and proposes changes of the draft to the discipline lead.
- The discipline lead consults the lead author and co-authors to modify the draft.
- Once satisfied with the draft DP, the discipline lead sends the draft DP and updated “checklist for DP review” to the entire TPDP, through the Secretariat, for assessment. The checklist should show that the draft fulfils the requirements. If relevant, the discipline lead should

highlight in the DP which sections were modified based on comments received. Note: DPs that do not meet the requirements in the checklist may be presented to the TPDP only to solve specific issues of content or scope. In this case, it is preferable to present only questions, except if the text of the diagnostic protocol is necessary to the discussion.

- The TPDP discusses the draft DP during a meeting, and either finds it suitable for member consultation and recommends it to the SC, or returns it, through the discipline lead, with specific comments or proposals to the lead author and co-authors for further work, or agrees on some other action such as to consult with other relevant experts.

### **Review of member comments on a draft DP**

- Member comments are compiled by the Secretariat
- Compiled member comments are forwarded to the TPDP discipline lead for action, and the TPDP and SC are informed that the comments are posted on the IPP.
- Member comments are reviewed by the discipline lead, which produces an amended draft (with track changes) and includes responses to member comments within the compiled member comments. The TPDP discipline lead should consult with and may be assisted by the lead author and co-authors in this process, and should be assisted by the steward on specific matters. The amended draft and responses to comments are circulated to all TPDP members, with a recommendation from the discipline lead and TPDP steward on how to proceed.
- Substantial comments that have broad implications should be discussed by the TPDP, even if the discipline lead might have made a proposal for the specific DP under consideration. This process is coordinated by the discipline lead or TPDP steward. Proposed changes may be incorporated or not, or the TPDP may recommend further study, with the reasons documented.
- Whether the draft is changed or not as a result of member comments, the compiled comments and responses to comments are submitted to the SC.
- If the draft standard is changed as a result of comments, the draft should be accompanied by recommendations on how to proceed.
- The CPM has delegated its authority to the SC to adopt DPs on its behalf. Once the SC approves the DP, the Secretariat makes it available and contracting parties are notified. The notification period for approved DPs is twice a year on defined dates. Contracting parties have 45 days to review the approved DP and submit a formal objection, if any. If no formal objection is received, the SC, on behalf of the CPM, adopts the DP. DPs adopted through this process are noted by the CPM at its following meeting and attached to the report of the CPM meeting. (CPM-7, 2012). If formal objections are received, the TPDP is consulted and the SC decides whether they are technically justified, and decides on further steps.

### **Review of published DPs**

- On a regular basis, the TPDP members review existing DPs in their disciplines. It was considered appropriate that adopted DPs be reviewed every 5 years unless a specific issue was raised. In particular, the TPDP members for the discipline should make a literature review, and bring to the attention of the TPDP any new literature that may have an impact on the DP.
- If revision is necessary, and in consultation with the lead author and co-authors, the discipline lead recommends updates to take into account newly published and/or validated methods, and modifications to methods in existing DPs. Proposals for update are presented to the TPDP. If a change is required, the TPDP makes a proposal and sends it to the SC with recommendations.
- When a technical revision is required for an adopted DP, the SC can adopt the updates to adopted DPs via electronic means. The revised DPs must be made publicly available as soon as the SC adopts them. DPs revised through this process are noted by the CPM and attached to the report of the CPM meeting (CPM-7, 2012). Criteria of the type of revisions that could

be submitted to this process were suggested by the TPDP in November 2012, to be discussed by the SC.

- The following sentence of ISPM 27:2006. Appendix 1, section 2 should be included in each DP from now on in order to be clear that adopted DPs will be reviewed and attract comments once users have started using the protocols: “A request for a revision to a diagnostic protocol may also be submitted by NPPOs, RPPOs or CPM subsidiary bodies through the IPPC Secretariat (ippc@fao.org), which will in turn forward it to the TPDP.”

## **ROLE OF TPDP MEMBERS**

### **TPDP members:**

- Track and manage preparation of DPs under their lead, including editing and ensuring compliance with ISPM 27.
- Consult and use the latest versions of TPDP procedures available on the TPDP work area.
- Ensure proper communication with lead authors and co-authors, including: contact lead authors and co-authors once selected; inform lead authors and co-authors of changes in procedures or instructions relevant to development of DPs; ensure that lead authors engage their co-authors in the drafting process; maintain appropriate contact with lead authors and co-authors. In case of communication problems with an expert (wrong address, no response, etc.), contact the Secretariat with details on last attempt(s).
- Identify protocols for which new lead authors or additional/replacement co-authors are needed, and follow the process for replacing them.
- Regularly update the document on the status of DPs for each DP under their lead on request of the Secretariat and provide updates at the TPDP meeting, including issues raised during the development of the DP.
- Act as referees for draft DPs and assemble comments using the “checklist for DP review”.
- Use the “checklist for DP review” for each DP under their lead, when receiving the first draft and before presenting a draft DP to the TPDP.
- Manage the consideration of the comments received during the expert consultation on the IPP (and possibly provide compiled comments and proposals to the lead author).
- Manage the response to comments received during member consultation.
- Review published DPs in their discipline, and recommend revision as appropriate.
- On demand from the Secretariat, arrange for the preparation of a PowerPoint presentation on a draft DP for member consultation, in preparation for regional workshops for the review of draft ISPMs.

When they leave the TPDP, transmit appropriate information to the new member for the discipline.

## Appendix 6 – Instructions for authors (in session track changes)

### DIAGNOSTIC PROTOCOLS FOR REGULATED PESTS - INSTRUCTIONS TO AUTHORS

(Status: Approved by the TPDP (October 2006), Annex 1, noted by the Standards Committee, May 2007, Revised by TPDP June 2008; adjusted after the SC November 2008, adjustments noted at SC May 2009, revised by the TPDP (July 2010) (annex 6 of report), noted by SC May 2011; [revised by the TPDP November 2012, to be presented to the SC May 2013](#))

These instructions are based on International Standard for Phytosanitary Measures ISPM 27 (*Diagnostic protocols for regulated pests*) and are compiled to provide more specific explanatory guidance for authors of diagnostic protocols (DPs). Authors are encouraged to study ISPM 27 to ensure that the DP is consistent with the standard. Guidelines on the format of DPs are also given.

### CONTENTS

Appendix 6 – Instructions for authors (in session track changes).....	46
1. General considerations .....	46
1.1 Minimum requirements for reliable diagnosis of regulated pests .....	46
1.2 Other general considerations.....	47
2. Definitions .....	48
3. Methodology.....	48
4. Structure and content of a diagnostic protocol .....	50
4.1 Pest information .....	50
4.2 Taxonomic information .....	50
4.3 Detection.....	51
4.4 Identification.....	51
4.5 Records .....	52
4.6 Contact points for further information .....	53
4.7 Acknowledgements.....	53
4.8 References.....	53
Appendix 1: Guidelines on formatting of diagnostic protocols .....	54
Appendix 2: Combination of methods in diagnostic protocols - Some general considerations on the concept.....	58
Appendix 3: Cover note for diagnostic protocols.....	61

## 1. General considerations

### 1.1 Minimum requirements for reliable diagnosis of regulated pests

Under the heading titled ISPM 27 states:

*Diagnostic protocols may be used in different circumstances that may require methods with different characteristics. Examples of such circumstances grouped according to an increased need for high sensitivity, specificity and reliability are:*

- routine diagnosis of a pest widely established in a country
- general surveillance for pest status
- testing of material for compliance with certification schemes

- surveillance for latent infection by pests
- surveillance as part of an official control or eradication programme
- pest diagnostic associated with phytosanitary certification
- routine diagnosis for pests found in imported consignments
- detection of a pest in an area where it is not known to occur
- cases where a pest is identified by a laboratory for the first time
- detection of a pest in a consignment originating in a country where the pest is declared to be absent.

The ISPM also states:

*Diagnostic protocols provide the minimum requirements for reliable diagnosis of regulated pests. This may be achieved by a single method or a combination of methods. Diagnostic protocols also provide additional methods to cover the full range of circumstances for which a diagnostic protocol may be used. The level of sensitivity, specificity and reproducibility of each method is indicated where possible. NPPOs may use these criteria to determine the method or combination of methods that are appropriate for the relevant circumstances.*

This means that the minimum requirement usually is applicable to one of the first indentations (e.g. routine surveillance). Authors should provide information for the National Plant Protection Organization (NPPO) to make decisions on the methodology required for the relevant circumstances.

If necessary, DPs may describe more than one method to take into account the varying capabilities of laboratories and the situations for which the methods are applied. Such situations include diagnosis of different developmental stages of pests, which require different methodologies, as well as the degree of certainty required by the NPPO. For some purposes a single method may be sufficient, for others a combination of methods may be necessary. This applies both to the minimum requirements for a diagnosis and where additional requirements are necessary (such as where a high degree of certainty in the diagnosis is required). In cases where morphological methods can be reliably used but appropriate molecular methods have been developed, the latter should be presented as alternative or supplementary methods.

## **1.2 Other general considerations**

DPs are published as annexes to ISPM 27 (*Diagnostic protocols for regulated pests*). They describe procedures and methods for the detection and identification of pests that are regulated by Contracting Parties of the International Plant Protection Convention (IPPC) and relevant for international trade. They are addressed to diagnosticians/diagnostic laboratories performing official tests as part of phytosanitary measures. The DPs provide guidance on the diagnosis of specified pests. Information is provided on the specified pest, its taxonomic status and the methods to detect and identify it. As indicated in Section 1.1, DPs contain the minimum requirements for reliable diagnosis of the specified pest and provide flexibility to ensure the methods are appropriate for a range of circumstances of use.

DPs may cover a species, taxa below species level, several species within a genus, or an entire genus, for example where several species within a genus are regulated pests.

Authors should draft DPs in accordance with the requirements given in the main text of ISPM 27.

General guidelines on the formatting of DPs are in Appendix 1. By using these guidelines, authors will help ensure consistency between DPs and facilitate processing of draft DPs. These guidelines will be consolidated as more DPs are developed. Authors are also invited to refer, as a model, to the first DP (for *Thrips palmi*). [Some general considerations on the concept of combinations methods in diagnostic protocols are given in Appendix 2.](#)

DPs are drafted by a group of authors called an editorial team co-ordinated by a lead author and overseen by a discipline lead from the TPDP. The editorial team, including the lead author, is recommended by the TPDP discipline lead and approved by the entire TPDP. To ensure global

coverage of the protocol and to facilitate adoption, authors should consult relevant experts from different regions outside of the editorial team prior to submission of final drafts to the TPDP. A cover note giving the list of experts/countries that have written and reviewed the draft, and any main discussion points that have arisen and been resolved should be included (see Appendix 3).

## 2. Definitions

- **Pest Diagnosis**: The process of detection and identification of a pest.
- **Reproducibility**: Ability of a test method to provide consistent results when applied to aliquots of the same sample tested in different conditions.
- **Sensitivity**: Smallest detectable amount of the target (target may include live organisms, antibodies, nucleic acids).
- **Specificity**: Characteristics of a test as concerns its performance with regard to cross-reactions with non-target (false positives) or lack of reaction with target (e.g. subgroups or individuals of the pest) (false negatives).

## 3. Methodology

Each DP should contain the methods and guidance necessary for the named pest(s) to be detected and positively identified by an expert (i.e. an entomologist, mycologist, virologist, etc.). Authors should select methods on the basis of their sensitivity, specificity and reproducibility, also taking into account the availability of equipment, the expertise required for these methods and their practicality (for example, ease of use, speed and cost). Only methods of relevance for diagnostics should be indicated in the protocol.

All methods should be described separately in a consistent manner with sufficient detail (including equipment, reagents and consumables) to be able to perform the test without further reference to the literature. However, common laboratory procedures do not need to be detailed in the text. Brand names should not be given unless they are technically necessary and directly affect the result of the diagnosis (see also below). If the method is based on a commercial kit it is not necessary to repeat the manufacturer's instructions. DPs should not be written in the form of standard operating procedures but should provide sufficient detail to allow NPPOs to develop such procedures. Where appropriate, reference may be made to methodology described in other adopted DPs annexed to the ISPM 27.

For all methods, information on their sensitivity, specificity and reproducibility, and specifications from multi-laboratory validation trials (when available) should be included. These data, as far as possible, should be quantitative, but in the absence of quantitative data, qualitative information may be provided. [For each method, if any element of the validation data is not available \(e.g. sensitivity\), it may be useful to indicate it in the method description, in order to clearly indicate that this element has not simply be omitted.](#)

The names of particular brands of chemicals, reagents and equipment should, as far as possible, be avoided and a correct designation or description of the chemical, reagent or equipment shall be given rather than a trade name (brand name).

Brand names should only be included when the brand is considered to affect the level of specificity, sensitivity and/or reproducibility quoted in the diagnostic protocol. If this is the case, the brand name may be given in the text but shall be associated with a footnote as follows:

FOOTNOTE: "The use of .....in this diagnostic protocol implies no approval of them to the exclusion of others that may also be suitable. This information is given for the convenience of users of this protocol and does not constitute an endorsement by the CPM of the chemical, reagent and/or equipment named. Equivalent products may be used if they can be shown to lead to the same results."

If it is known that only one chemical, reagent and/or equipment is currently available, that is suitable for the successful application of the protocol, the brand name may be given in the text of the protocol but shall be associated with a footnote as follows:

FOOTNOTE: “The use of .....in this diagnostic protocol implies no approval to the exclusion of others that may also be suitable. This information is given for the convenience of users of this protocol and does not constitute an endorsement by the CPM of the chemical, reagent and/or equipment named. Equivalent products may be used if they can be shown to lead to the same results.”

Description of all the controls mentioned must be provided, and the minimum requirements for controls should be indicated.

Guidance on positive and negative controls and reference material should be included in each of the tests. Methods where the inclusion of appropriate controls is essential (e.g. enzyme-linked immunosorbent assay [ELISA]) should be indicated. Sources and specifications of controls and reference materials (e.g. catalogue numbers of bacterial reference strains) should be provided.

Authors should provide information and guidance on methods that either singly or in combination lead to diagnosis of the pest. Guidance should also be provided on the interpretation of results, in particular the criteria for the determination of a positive or negative result for each method. General elements on combination of methods are provided as Appendix 2 for information. When methods are cross-referred to in different parts of the DP, it may be useful to indicate the section number where the method is fully described.

It is not necessary to include all methods which have been reported for a particular pest, only those which are reliable, currently available and considered to be of use for the purposes described in ISPM 27.

If several methods are needed for the diagnosis, and / or if many alternative methods are included, a flow diagram may be presented. It should show the different alternative methods allowing to reach the minimum requirements for the diagnostic. Where relevant, it should present the alternative methods for specific circumstances (e.g. symptomatic fruit, asymptomatic fruit). The diagram should indicate the reliability of each method or combination of methods. It is not intended to be a decision-making tree but is intended to assist NPPOs in determining which method(s) are appropriate for use under different circumstances. It should not refer to different scenarios/situations of use of the diagnostic protocols, i.e. interception etc. When authors conclude that a combination of methods is needed, the reasons should be provided. The flow diagram should be accompanied by some explanation in the text, indicating the methods available and their advantages. The flow diagram can first be referred to in the identification section, before methods are described. Each method mentioned in the flow diagram should be accompanied by a cross-reference to the section number where this method is described.

When several methods are mentioned, their advantages and disadvantages should be given (e.g. duration of the test, cost, availability of reagents, requirements for specialized knowledge or equipment, limited validation data available such as covering only some populations of an organism) as well as the extent to which the methods or combinations of methods are equivalent.

If illustrations (e.g. photographs or line drawings) are essential to the diagnosis, they should be included in the protocol (detailed guidance in Appendix 1). In addition, photographs that provide additional information but are not essential for the diagnosis may be posted on the IPP. In some cases links may be provided to other web sources for photographs. The lead author is responsible for obtaining any relevant permission to use the photographs.

## 4. Structure and content of a diagnostic protocol

DPs should follow the layout of section 2 of ISPM 27 and should be arranged into the following sections, numbered as follows:

- (1) Pest information
- (2) Taxonomic information
- (3) Detection
- (4) Identification
- (5) Records
- (6) Contact points for further information
- (7) Acknowledgements
- (8) References

Each section should be divided into sub-sections as required (especially the detection and identification sections) and both sections and sub-sections should be numbered. An index of the sections should be included at the start of the DP and the pages of the DP numbered. As DPs themselves will be annexes to ISPM 27, they should not have annexes or appendices.

Important note: all data in DPs should be publically available. Authors should in particular be aware that any material that may be developed specifically for the purpose of the DP, for example keys or photos of characters, will be made publically available during the development process.

### 4.1 Pest information

Authors should provide brief information on the pest (generally less than one page of type-written text), including, where appropriate, its life cycle, morphology, variation (morphological and/or biological), relationship with other organisms, host range (in general), effects on hosts, present and past geographic distribution (in general, not country-by-country), mode of transmission and dissemination (vectors and pathways). It is not necessary to include specific details about the epidemiology of the disease or its management.

Supplementary information, such as detailed information on the pest's geographic distribution or hosts, should not be included except when directly relevant for diagnosis. The DP is not intended to be a pest data sheet but reference to such data sheets should be provided when publicly available and considered to provide useful background information.

All general information on the pest (biology, hosts, etc.) should be under this section, and not under other sections of the protocol.

### 4.2 Taxonomic information

Under this section, the correct scientific name and authority should be given and an overview of the relevant taxonomic hierarchy as appropriate to the type of pest (e.g. Domain, Kingdom, Phylum, Order, Family, Genus, Species, relevant below species taxon). Mention the references used for the scientific names indicated in this section.

Include synonyms and relevant former names (these may be taxonomically incorrect but relevant in relation to the literature) as appropriate. Only important synonyms should be mentioned, listed by chronological order. If there are other synonyms, a reference to a publication listing them can be added.

For fungi, the teleomorph name should be used; teleomorph synonyms may be included as appropriate. The anamorph name and its synonyms (as relevant) should also be presented. For viruses, internationally recognized acronyms should be included.

The English common names widely used in international scientific literature should also be included. If possible and available, indicate a reference giving common names in other languages (but do not include common names in other languages in this section).

### 4.3 Detection

- As stated in ISPM 27, this section provides information and guidance on:
- the plants, plant products or other articles capable of harbouring the pest.
- the signs and/or symptoms associated with the pest (characteristic features, differences or similarities with signs and/or symptoms from other causes), including illustrations, where appropriate.
- the part(s) of the plant, plant products or other articles on/in which it may be found.
- the developmental stages of the pest that may be encountered, together with their likely abundance and distribution on/in the plants/plant products or other articles.
- the likely occurrence of the pest associated with developmental stages of the host(s), climatic conditions and seasonality.
- methods for discovering the pest in the commodity (e.g. visual, hand lens).
- methods for extracting, recovering, and collecting the pest from the plants, plant products or other articles, or for demonstrating the presence of the pest in the plants, plant products or other articles.
- methods for indicating the presence of the pest in asymptomatic plant material or other materials (e.g. soil or water), such as ELISA tests or culturing on selective media.
- viability of the pest.

The ISPM also states that *guidance is also provided on resolving possible confusion with similar signs and/or symptoms due to other causes.*

Methods for detection may be interpreted differently depending on the type of pest being considered. For example, detection of an insect may relate to observation of individuals or signs of damage in consignments, whereas detection methods for bacteria may involve culturing extracts of suspected plant material on differential or semi-selective medium.

When a detection method may also be used for identification, it is recommended that it is described in the detection section ([see 4.4. for the details to be provided for methods](#)) and then referred to in the following identification section. Any comments about its use for detection or identification should be included in the relevant section. Methods that detect a group of pathogens rather than a specific pathogen should be described in the detection section. Sampling in protocols refers to sampling for laboratory analysis, not to sampling for inspection of a commodity. For seed/grain, it might be acceptable to give more details. Sampling procedures for inspectors and inspectors' instructions on recognition of the pest from signs and symptoms should not be included but only essential information for diagnosis should be given. Procedures for inspectors are likely to be covered in an inspection manual. Additional information on the sample that may be relevant for proper diagnosis should be provided (e.g. storage conditions).

Note: in some cases (e.g. virology), sections 4.3 Detection and 4.4 Identification might be combined.

### 4.4 Identification

In this section, in addition to a description, authors should provide information and guidance on methods that either used alone or in combination lead to the identification of the pest. Methods for quick, presumptive indications of identity (which will later need to be confirmed) may also be included.

~~Two main types of methodologies used y are included~~ in DPs ~~are~~, ~~methodologies~~ based on morphological, morphometric or biological characteristics of a pest, ~~or on~~ ~~and those based on~~ biochemical and/or molecular properties ([see ISPM 27](#)). Morphological characteristics may be

investigated directly or may only be examined after culturing or isolation of the pest. This may also be required for biochemical and/or molecular assays. Where culturing or isolation procedures are necessary components of methods, details should be provided.

Where appropriate, methods for isolation of pests from asymptomatic plants or plant products (such as tests for latent infection) should be given as well as methods for extraction, recovery and collection of pests from plant or other material. Methods should similarly be provided for direct identification of pests using biochemical or molecular tests on asymptomatic material.

ISPM 27 states:

For morphological and morphometric identifications, details are to be provided, as appropriate, on:

- methods to prepare, mount and examine the pest (such as for light microscopy, electron microscopy and measurement techniques).
- identification keys (to family, genus, species).
- descriptions of the morphology of the pest or of its colonies, including illustrations of diagnostic characters [as appropriate], and an indication of any difficulties in seeing particular structures.
- comparison with similar or related species.
- relevant reference specimens or cultures.

Guidance should be provided on resolving possible confusion with similar and related species or taxa.

For molecular methods, details should be provided, as appropriate, on:

- the target sequence (e.g. target gene, amplicon size and location) and reaction conditions (e.g. oligonucleotide sequence, enzyme source and thermal cycler).
- nucleic acid extraction and purification (e.g. tissue sources, extraction and purification methods, and nucleic acid concentration).
- reverse transcription (e.g. reaction volume, concentration and volume of constituents, denaturation and incubation temperatures).
- polymerase chain reaction (e.g. reaction volume, concentration and volume of constituents, thermocycling conditions).
- restriction analysis (e.g. DNA preparation, reaction volume, concentration and volume of constituents, denaturation and incubation conditions).

[minimum controls \(a standard text on controls for molecular methods is under development\).](#)

Elements regarding the preservation of specimen, especially for entomology, should be included if necessary. Under the section identification, guidance should be given on short- and long-term preservation -(where relevant).

In the case of diagnostic protocols for insects or nematodes, consider presenting the main characters for the diagnostic in a table (see *Thrips palmi*).

In the case of diagnostic protocols for plants, if there is no specific difficulty for identifying plants of the species concerned using a key, the text may simply give a reference(s) to suitable key(s).

[Where parameters are indicated \(e.g. temperature, pH, etc.\), a precise value should be indicated if it is critical to the method \(e.g. an analysis to be performed at exactly 15 °C\); in other cases, either a range of values should be given, or the word “approximately” be used before the value.](#)

#### 4.5 Records

In this section, authors should refer to section 2.5 of ISPM 27 which lists the records required to be kept. There is no need to repeat section 2.5, only records that are required in addition to those detailed in ISPM 27 should be listed in the DP. However, in addition, authors should include a description of

appropriate evidence of results where other NPPOs may be adversely affected by the results of the diagnosis and therefore the records and evidence of the results of the diagnosis should be retained for at least one year.

#### **4.6 Contact points for further information**

In this section, authors, in cooperation with the discipline lead, should provide contact details (name, address, e-mail, telephone, facsimile, etc.) of organizations or individuals with particular expertise on the pest(s), which may be consulted regarding any questions on the DP. These contacts must agree to act in this capacity prior to their inclusion in the DP.

It might be useful to have a global coverage when possible, or at least contacts in several regions. However the center of excellence might be in one region, and contacts from one region only might be indicated in this case. In general, it is preferable to avoid mentioning two contacts from the same country, except if they have very specific expertise and no contact is available elsewhere. The Secretariat can also be mentioned, in case none of the contact points can be reached.

#### **4.7 Acknowledgements**

In this section, the name and address of the experts who wrote the first draft of the DP are given, together with those of any others who made major contributions. This list should be finalized in consultation between the lead author and the discipline lead. The inclusion of names in the acknowledgements should be at the discretion of the discipline lead in consultation with the lead author. In instances where these experts are the same individuals as those listed in the preceding section, the details should be cross-referenced. Only those significantly involved in the development of the draft should be included in this section.

#### **4.8 References**

ISPM 27 states: *References to accessible scientific publications and/or published laboratory manuals are given that may provide further guidance on the methods and procedures contained in the diagnostic protocol.*

In this section, relevant references to scientific publications and published laboratory manuals cited in the text should be given. The references should be kept to a minimum and should concern the diagnosis of the pest and species with which the pest may be confused, its symptomatology and methods for extraction, detection and identification. It is not necessary to include a complete list of references concerning geographic distribution, host lists, epidemiology and general biology, although reference may be made to key publications which review this information, e.g. pest data sheets. The number of references included will vary between DPs, but preferably the list should include fewer than 40 references.

See the guidelines in the Appendix 1 to these Instructions to authors for the format of references.

## DIAGNOSTIC PROTOCOLS FOR REGULATED PESTS INSTRUCTIONS TO AUTHORS Appendix 1: Guidelines on formatting of diagnostic protocols

General guidelines on formatting of ISPMs are given in the “Administrative guidelines for the structure of standard-setting documentation” in the IPPC Procedural Manual, which can be found on the internet on the IPP (<https://www.ippc.int/index.php?id=159891>).~~<https://www.ippc.int>~~. This Appendix partly uses these guidelines but also gives additional recommendations that are specific to DPs. A standardized format for protocols is also under [development/consideration](#).

### 1. First page

The first page should contain:

- a reference to ISPM 27 (*Diagnostic Protocols for Regulated Pests*) (i.e. “Annex to ISPM 27”)
- the title of the draft protocol
- a cover note in the format of Appendix 3, indicating experts/countries that have written and reviewed the draft, and any main discussion points that have arisen and been resolved.
- A table of contents, listing all numbered headings and subheadings. At the drafting stage, the table of contents should be in the protocol, but it is not necessary to indicate page numbers.

### 2. Main text

#### ~~Section on endorsement~~

~~The first section of the standard should be added as follows:~~

#### ~~"Adoption~~

~~This diagnostic protocol was adopted by the Commission on Phytosanitary Measures in —  
[to be completed after adoption]."~~

#### Numbered headings and sub-headings

Individual sections are detailed in the instructions on formatting of ISPMs above. Headings, sub-headings and further subdivisions should be numbered with Arabic numbers, for example: 1.1, 1.2.1, 1.3.2.2, etc.

Titles of level one (1., 2. etc) have a capital letter at the beginning of each word. Other numbered titles have only one capital letter at the beginning of the title.

#### Use of illustrations and tables

All illustrations (i.e. photographs, line drawings, flow diagrams~~me~~) and tables should be numbered with Arabic numbers and should be referred to in the text.

Figures/tables and text should match, i.e. all figures/tables should be referred to in the text, or should not be in the protocol. If a figure refers to several separate elements/characters, these elements should also be cross-referred to in the text. [The flow diagram should indicate, for each method, the section number under which it is described.](#)

For reason of file size, all complete figures (i.e. with images/captions/associated text) should not be in the main text of the protocol, but should be provided to the discipline lead as a separate Word file. Tables should remain with the text of the protocol.

All photographs, or specially drafted or reproduced illustrations should have an attribution. The text may be small type size and oriented vertically at the side of a photograph or it may be included in the caption of an illustration.

Illustrations should be of a sufficient quality for printing. A high quality file of each illustration should be provided, separately from the text, to the IPPC Secretariat. Detailed guidance is provided below:

- (1) Ensure that images (photographs, diagrams, etc.) have a resolution of 300 dpi for sharp printing, and that the printed image is clear, illustrative for the purpose and of sufficiently high quality.
- (2) Reduce images (at 300 dpi) to the smallest final dimensions that convey the necessary information in the image (5-8 cm is considered as a good width for most illustrations). If full page illustration is needed, maximum width is 16 cm)
- (3) Crop all unnecessary parts of the image
- (4) Ensure all texts concerning the image (explanatory detail with arrows or call-outs etc) is part of the caption and/or are linked together (A lot of separate boxes with details of identification of image number and insect parts poses a great risk of error.)
- (5) At a late stage of development (when member comments are integrated and the protocol is being prepared for adoption, *i.e. once the figures will not change anymore*), also provide all figures/photographs as separate TIF or JPG files (compliant with a, b, c above), so that they can be further processed to achieve the optimal file size and quality.

### Use of footnotes

Use of footnotes should be limited to increase readability of the text. If footnotes are nevertheless needed, they should be numbered with Arabic numbers. [Note. A separate footnote is needed at each mention of a brand name \(see section 3\).](#)

### Terminology

- Phytosanitary terms should be used according to the most recent version of the ISPM 5: *Glossary of phytosanitary terms*.
- The general dictionary reference for English ISPMs is the Oxford English dictionary.
- Use organize, authorize and recognize (and not organise, authorise or recognise).
- Use website and not Web site or Website.

### Latin Scientific names

- [Family names are italicized only for viruses \(i.e. not for insects, bacteria etc.\).](#)
- Indicate the author after the first occurrence (in the text) of the Latin name of a pest.
- The species name should be written in full at its first occurrence, e.g. *Thrips palmi*, and shortened at others: *T. palmi*. If another species of the same genus are mentioned later in the text, it is not necessary to write the genus name in full, e.g. *T. flavus*. However, in cases where abbreviating the genus is confusing, the name can be given in full, for example if another genus starting with the same letter is mentioned in the same paragraph (example: "Hosts include *Triticum aestivum* (wheat) ...*T.[Tilletia] indica* has been shown to infect other ...).
- Latin names are italicized (but not spp., sp. etc.)
- [Use Latin names for host plants \(common names may be indicated between brackets at first occurrence if appropriate\).](#)

### Measurement units

When measurement units are abbreviated, the standard abbreviation should be used, e.g.:

m	meter
s	second
W	watt
min	minute
litre	litre
ml	milliliter
µl	microliter

There should be a space between the number and the unit.

### Other specific formatting

- Gene names are italicized when written in full, except the gene number (e.g. *NADH dehydrogenase 5 gene*)
- Acronyms should be written in full at the first mention.

### **Lists of items**

See *Thrips palmi*.

### **List of references**

References should be in alphabetical order.

References to other ISPMs and the IPPC are detailed in the procedural manual, but usually not needed in protocols. Regarding scientific references and other publications, some examples are given below. Attention is drawn to the fact that the total number of pages should be included for references to books.

#### *Article in a journal or proceedings*

- Bhatti, J.S.** 1980. Species of the genus *Thrips* from India (Thysanoptera). *Systematic Entomology*, 5: 109–166.
- Brunner, P.C., Fleming, C. & Frey, J.E.** 2002. A molecular identification key for economically important thrips species (Thysanoptera: Thripidae) using direct sequencing and a PCR-RFLP-based approach. *Agricultural and Forest Entomology*, 4: 127–136.
- Kox, L.F.F., van den Beld, H.E., Zijlstra, C. & Vierbergen, G.** 2005. Real-time PCR assay for the identification of *Thrips palmi*. *Bulletin OEPP/EPPO Bulletin*, 35: 141–148.
- Mound, L.A. & Morris, D.C.** 2007. A new thrips pest of *Myoporum* cultivars in California, in a new genus of leaf-galling Australian Phlaeothripidae (Thysanoptera). *Zootaxa*, 1495: 35–45.

#### *Books or conference proceedings*

- Mound, L.A. & Kibby, G.** 1998. *Thysanoptera. An Identification Guide*. 2nd edition. Wallingford, UK, CAB International. 70 pp.
- Nakahara, S.** 1994. The genus *Thrips* Linnaeus (Thysanoptera: Thripidae) of the New World. USDA Technical Bulletin No. 1822. 183 pp.
- Sakimura, K., Nakahara, L.M. & Denmark, H.A.** 1986. A thrips, *Thrips palmi* Karny (Thysanoptera: Thripidae). Entomology Circular No. 280. Division of Plant Industry, Florida; Dept. of Agriculture and Consumer Services. 4 pp.

#### *Section from a book*

- EPPO/CABI.** 1997. *Thrips palmi*. In I.M. Smith, D.G. McNamara, P.R. Scott & M. Holderness, eds. *Quarantine Pests for Europe*, 2nd edition. Wallingford, UK, CAB International. 1425 pp.

#### *CD-Rom:*

- Moritz, G., Mound, L.A., Morris, D.C. & Goldarazena, A.** 2004. Pest thrips of the world: visual and molecular identification of pest thrips (CD-ROM), Centre for Biological Information Technology (CBIT), University of Brisbane. ISBN 1-86499-781-8.

#### *Article from proceedings*

- Murai, T.** 2002. The pest and vector from the East: *Thrips palmi*. In R. Marullo, & L.A. Mound, eds. *Thrips and Tospoviruses: Proceedings of the 7th International Symposium on Thysanoptera*. Italy, 2–7 July 2001, pp. 19–32. Canberra, Australian National Insect Collection.

***Internet documents or websites***

**EPPO.** 2008. URL: <http://www.eppo.org/> (accessed 17 June 2008).

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**USDA** (United States Department of Agriculture). 2004. *Minimum sanitation protocols for offshore geranium cutting production*. APHIS-PPQ Pest Detection and Management Programs. 27 pp. Available at [http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/ralstonia/downloads/ralstoniaworkplan.pdf](http://www.aphis.usda.gov/plant_health/plant_pest_info/ralstonia/downloads/ralstoniaworkplan.pdf) (accessed January 2010).

## **DIAGNOSTIC PROTOCOLS FOR REGULATED PESTS INSTRUCTIONS TO AUTHORS Appendix 2: Combination of methods in diagnostic protocols - Some general considerations on the concept**

Diagnostic methods are often used in combination with others in order to increase the sensitivity, specificity or reliability of the diagnosis. ISPM 27 provides in section 1 the following guidance on this:

“Diagnostic protocols may be used in different circumstances that may require methods with different characteristics. Examples of such circumstances grouped according to an increased need for high sensitivity, specificity and reliability are:

- routine diagnosis of a pest widely established in a country
- general surveillance for pest status
- testing of material for compliance with certification schemes
- surveillance for latent infection by pests
- surveillance as part of an official control or eradication programme
- pest diagnostic associated with phytosanitary certification
- routine diagnosis for pests found in imported consignments
- detection of a pest in an area where it is not known to occur
- cases where a pest is identified by a laboratory for the first time
- detection of a pest in a consignment originating in a country where the pest is declared to be absent.

For example, in the case of routine diagnosis, the speed and cost of a test method may be more relevant than sensitivity or specificity. However, the identification of a pest by a laboratory or in an area for the first time may require methods with a high level of specificity and reproducibility. The significance of the outcome of a diagnosis is often dependent on proper sampling procedures. Such procedures are addressed by other ISPMs (under preparation).

Diagnostic protocols provide the minimum requirements for reliable diagnosis of regulated pests. This may be achieved by a single method or a combination of methods. Diagnostic protocols also provide additional methods to cover the full range of circumstances for which a diagnostic protocol may be used. The level of sensitivity, specificity and reproducibility of each method is indicated where possible. NPPOs may use these criteria to determine the method or combination of methods that are appropriate for the relevant circumstances.”

In particular relevant for “the combination of methods” is the following statement:

“Diagnostic protocols provide the minimum requirements for reliable diagnosis of regulated pests. This may be achieved by a single method or a combination of methods.”

The core decisions that are required in the case of each protocol are therefore:

What is the minimum requirement for a reliable diagnosis?

Is a combination of methods necessary to achieve this? If yes, which combination?

It is obvious and generally accepted, that the combination of methods may only be appropriate, if at least one of the core factors “sensitivity, specificity or reliability” are increased by the combination<sup>5</sup>. It is however also known, that some methods may provide a higher specificity than others (and therefore may be used as a 2<sup>nd</sup> method), while such method may not provide necessarily the same sensitivity as

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<sup>5</sup> In some situations it may be decided to apply both or even more tests at the same time in parallel. This paper does not address this situation and the considerations that may lead to such decisions. In general the final characteristics of the parallel application of different methods is equates to the “sum” of the best characteristics of the relevant methods applied.

the first method (e.g. monoclonal versus polyclonal antibodies; bioassay versus PCR). In particular in such cases the priorities of the system applied (e.g. sensitivity, specificity or reliability) as required by the framework of the diagnosis (see list of examples in quotation from ISPM 27 above) need to be carefully balanced. Pending the framework in which the diagnosis is applied a certain combination may not be appropriate while in others a combination may be required.

The template on the next page analyses the possible situations and provides an indication whether a combination of methods with certain characteristics may be appropriate in diagnostic protocols. This template may help authors of diagnostic protocols and the TPDP to follow a consistent approach when the necessity and appropriateness of combinations of methods in DPs are discussed.

In reality when methods are combined all factors are to be considered and the methods are selected according to the needs of the individual situation.

In summary the following conclusion can be drawn:

- (1) The addition of a second method is not recommended, if the 2<sup>nd</sup> method has a **lower sensitivity** or is **less reliable** than the first method. In these circumstances the combination increases the risk of contradicting results. Pending the mode of interpretation this may include the risk of “false negative results”.
- (2) The addition of a second method is generally not recommended or not appropriate, if the 2<sup>nd</sup> method provides a higher sensitivity, a lower specificity or a higher reliability than the 1<sup>st</sup> method unless some other reason supports this combination.
- (3) The addition of a second method is recommended, if the second method provides a **higher specificity** than the first method. Such combination is often used, when the first method is cheaper or faster than the second one (screening method). In general **high costs and low speed** of methods are good reasons to apply them as a second method only, if they provide on the other hand some advantages over the 1<sup>st</sup> method e.g. higher sensitivity, higher specificity or higher reliability.

How to apply this template:

1. Consider that the decision on the first method has already been taken. The second method is only applied if the result of the first method is positive. (see also \* below).
2. Consider the individual column assuming that the other factors/methods are equivalent.
3. Ask the question: Is the combination recommended? focusing on the 2<sup>nd</sup> method.

The classification “**Risk**” is used to express that the combination carries the risk of weakening a result already achieved by method 1. Such combination should be avoided in all circumstances.

The classification “**Not appropriate**” is used to express that in general the combination of such factors in the given order is not contributing to the results of a diagnosis. In some specific situations the combination may nevertheless be considered to be appropriate.

	Sensitivity		Specificity		Reliability		Costs		Speed	
<b>Method 1</b>	higher	Lower	Lower	Higher	Lower	Higher	lower	higher	lower	higher
<b>Method 2</b>	lower	higher	Higher	Lower	Higher	Lower	higher	lower	higher	lower
<b>Combination recommended ?</b>	No 	No/yes 	Yes 	No/yes 	No/yes 	No 	Yes 	No 	No 	Yes 
<b>Reason</b>	Risk of contradicting results and false negative interpretation	Generally not appropriate, unless sample is already suspected	Appropriate if other factors (speed, cost etc. ) suggest this order	Generally not appropriate, unless 2 <sup>nd</sup> method provides some other benefit (isolation)	Generally not appropriate, unless in a situation where a false negative result (of the 1 <sup>st</sup> method) can be tolerated.	Risk of contradicting results and false negative interpretation	Appropriate if 2 <sup>nd</sup> method provides some other benefit. Typical situation.	Not appropriate unless 2 <sup>nd</sup> method provides some other benefit (isolation)	Not appropriate unless 2 <sup>nd</sup> method provides some other benefit (isolation)	Appropriate, fast result

\*: In some situations it may be appropriate that the 2<sup>nd</sup> method is applied even if the result of the first test was negative. Such situations may occur where most test results are positive and only a few results are negative. This condition does not apply to import situations. Also when consignments for export are tested such situations - if they exist at all - are rare. Such situation may occur in some specific surveillance situations in a heavily infested area. The inclusion of this situation in this table would be very complex and is therefore not addressed by this.

## DIAGNOSTIC PROTOCOLS FOR REGULATED PESTS INSTRUCTIONS TO AUTHORS Appendix 3: Cover note for diagnostic protocols

<p><b>Consultation on technical level</b> (to be updated throughout DP development)</p>	<p>The first draft of this diagnostic protocol was written by: [include a list of experts, in the following format; do not include postal addresses] Initial of first name Family name (institution name, city, country); Initial of first name Family name (institution name, city, country) etc. Example: C. Def (Institution name, City, Country); G. Hij (Institution name, City, Country); etc.</p> <p>Other experts consulted [include a list of other experts consulted experts, in the same format as above, <a href="#">including referee</a>]</p> <p>Fora at which the protocol was presented: [include a list of fora at which the protocol was presented, e.g. conference, symposium, seminar, etc., in the following format] Name, date, venue.</p>
<p><b>Main discussion points during development of the diagnostic protocol</b> (to be updated throughout DP development)</p>	<p>[Include as bullet points]</p> <p>Note: Especially after experts have been consulted at early stages of development, the cover note should indicate substantial comments that were not incorporated in the draft.</p>

## Appendix 7 – Checklist for authors

### A CHECKLIST FOR AUTHORS

During the 2010 and 2012 TPDP meetings the instruction for authors was discussed. It was noted that the authors do not always comply with the instructions to authors, and it was concluded that a small checklist for authors would be useful.

A checklist for authors is related to the following documents that should give guidance to the development of protocols:

1. Diagnostic protocols for regulated pests, Instructions for authors (ISPM 27).
2. Checklist for diagnostic protocol discipline leads and referees (approved by TPDP 2010 (TPDP 2012 Nov 10).
3. Standardized format for draft diagnostic protocols (proposal TPDP 2012 Nov 15).
4. Quality assurance issues associated with diagnostic protocols for regulated pests (Discussion paper, TPDP 2012 Nov 14).

This document intends as a checklist for authors to obtain more consistency among protocols.

The headings of the protocol are as follows. Above mentioned documents 1 and 3 are referred in case a more detailed instruction has been provided. This document has many affinities with the notes given in 3. Data used for DP are public available.

#### Title

- Use scientific name, with authority were relevant, scope indicated.

#### Consultation on technical level

- The detailed information provided in ‘Standardized format for draft diagnostic protocols’ is followed, and include a statement at the beginning of the protocol to indicate when it was drafted.

#### Pest information

- Geographic information is general, not by country, terms are carefully used (present, recorded, established etc).
- Latin name for the pest is used and include author(s) after the first occurrence of the name of the pest only.
- Latin names for hosts are used, italic on or below species level, higher ranks roman.
- All general information on the pest (biology, hosts, etc) is grouped in this section exclusively, max. 1 page. References to datasheets are included, no details on epidemiology or disease management.
- Subjective terms (e.g. (significant) economic impact) are avoided.

#### Taxonomic information

- Reference that is used for the names indicated in this section is mentioned.
- Scientific name is used throughout the protocol, common name is indicated only in this section once in English, reference to common names in other languages is advised.
- The relevant code of nomenclature is followed.
- No journal citations are given after names.
- Synonyms included are the important ones only, listed by chronological order.
- Species names are italic, higher ranks normal.
- Species are mentioned in full, genus is abbreviated at further occurrences, unless there might be a confusion with other generic names starting with the same letter.

**Detection**

- Text and flow diagram: both should be in line, text includes the steps/methods with their advantages and limitations, whether including a flow diagram is really essential is considered, minimum requirements are clearly indicated, the scope of the diagnoses is clearly defined.
- The flow diagram is not intended to be a decision scheme.
- Section dealing with the controls included.
- Combined detection/identification methods are described in this section, and refer to this under identification section.
- Sampling information is provided only for laboratory analysis, not for inspection (except for seed/grain testing, where relevant additional information could be provided).
- The necessity of the use of commercial kits/brand names is checked (i.e. use microtubes instead of eppendorf).
- common laboratory procedures, e.g. handling of samples, quarantine requirements, facilities, are not detailed in the text.
- All methods included are relevant for the diagnosis.
- The reasons for using a combination of methods are provided.
- Addition of a second method is evaluated following 1 (ISPM 27).
- When several methods are mentioned, their (dis)advantages are given (1).
- Method descriptions are not written as standard operation procedures.
- Reference to manufacturers instructions in method descriptions are provided, the choices of manufacturers are explained or provided with a disclaimer.
- specificity etc data .
- Controls for the methods used.
- Test results performance studies.
- Specification of pH, temperature range or exact.

**Identification**

- Text and flow diagram: Both should be in line, text includes the steps/ methods with their advantages and limitations, whether including a flow diagram is really essential is considered, minimum requirements are clearly indicated, the scope of the diagnoses is clearly defined.
- The flow diagram is not intended to be a decision scheme.
- Guidance for interpreting sequencing results are provided.
- Relevant information on preservation is provided (kind of material, period).
- The reasons for using a combination of methods are provided.
- Results of performance criteria sensitivity, specificity and reproducibility, and data of ring tests are included or referred.
- Use of tables for morphological characters is considered.
- Control for the methods used.
- Interpretation of the results.
- Test results performance studies.

**Records**

- Reference to section 2.5 of ISPM 27 is included, relevant additional records and evidence that should be maintained in case were other NPPO's may be involved are mentioned.

**Contact points for further information**

- Contacts are from several regions and appropriate, preference for one contact per country only
- The standard text provided in 3 is followed and consistent.

**Acknowledgements**

- Not yet harmonized, point of discussion in 3.

**References**

- The different type of references (journals/proceedings, books/conference proceedings, CD-Rom, internet documents or websites recognized and referred as indicated in 3.
- References with those mentioned in the text unambiguous, cross-checked.
- Author citations in text are consistent (e.g. (Smith *et al.*, 1996, Castlebury and Carris, 1999), the order is year of publication, followed by alphabetic in similar years.

**Figures**

- All illustrations included are necessary.
- Preference of use of line drawings or photographs has been considered.
- The numbers of illustrations are referred in the text at the right place.
- Tables are included in the text, and all other illustrations are kept in separate files..
- The size of the illustrations and captions are given according to 3.

**General**

- Appendices or annexes should not be included.
- consistency of terminology.
- Right abbreviations of measurements units as indicated in 1, are used.
- Are there capabilities for every member country to apply the propose methods?
- Are limitations of molecular techniques for quarantine pests considered?
- Are the limitations explicitly said: about countries, species, hosts (where the investigations were done)?
- Are the limitations of morphometric techniques said: as regional keys, immatures, anabiosis cases?
- Are reproducibility, sensibility and specificity clearly expressed?
- If contacts for organization of validation, proficiency tests, etc. are known, are they provided?

**Appendix 8 – TPDP 2012/2013/2014 Work Plan (by action)**

<b>DUE DATE</b>	<b>ACTION</b>	<b>RESPONSIBLE</b>
<b>1. Report</b>		
<b>15 January 2013</b>	Checklist for authors to be finalised for report	Hans de Gruyter
<b>15 January 2013</b>	To chair, steward and rapporteur	Secretariat
<b>25 January 2013</b>	Comments to Secretariat	Chair, Steward and rapporteur
<b>04 March 2013</b>	To TPDP	Secretariat
<b>11 March 2013</b>	Comments to Secretariat	ALL
<b>25 March 2013</b>	Final (posting in IPP)	Secretariat
<b>2. DP management</b>		
<b>20 December 2012</b>	All TPDP members update lead authors and editorial teams on the outcome of the TPDP meeting and provide deadlines for the lead authors.	ALL
<b>ongoing</b>	TP leads inform Secretariat if have not been successful in establishing contact with some authors and members of editorial teams (email, telephone)	ALL
<b>20 December 2012 and ongoing</b>	Secretariat to write to some NPPOs to check status of some authors and members of editorial teams	Secretariat
<b>3. Adoption of DPs, beyond TPDP: before adoption (<i>Guignardia citricarpa</i>, <i>Tilletia indica</i>)</b>		
<b>11 January 2013</b>	Discipline lead and authors revised the draft and respond to comments	Discipline lead and authors
<b>11 January 2013</b>	Secretariat send drafts + responses to TPDP	Secretariat
<b>25 January 2013</b>	TPDP send comments	TPDP All
<b>4. Adoption of DPs, beyond TPDP: before member consultation (<i>PSTVd</i>, <i>Erwinia amylovora</i>, <i>Xcc</i>)</b>		
<b>15 January 2013 (latest 30 January 2013)</b>	Working with author to finalize draft	Delano James, Brendan Rodoni, Robert Taylor + authors
<b>February 2013</b>	Draft to TPDP (2 weeks) for comment	ALL
<b>February/March 2013</b>	Draft submitted to the SC (electronic means) for approval for member consultation	Secretariat
<b>May 2013</b>	SC considers which ISPMs approved for member consultation should be sent for consultation in 2013	SC Possibly the 3 DPs
<b>01 July 2013</b>	Member consultation 2013	-
<b>5. 2013 Meeting organisation</b>		
<b>28 February 2013</b>	Invitation sent (+ draft agenda)	Secretariat
<b>01 April 2013</b>	Leads to confirm DPs for meeting and inform Secretariat of possible invited experts (for DPs to be presented at the Paris meeting)	Leads
<b>15 April 2013</b>	Possible invited experts contacted with pre-announcement (provided DP is ready for the meeting)	Secretariat
<b>05 May 2013</b>	Deadline for submission of all documents to be considered at the June 2013 meeting (except template and DPs)	Meeting participants
<b>05 May 2013</b>	Paper on presentation of molecular methods details as table	Geraldine Anthoine
<b>05 May 2013</b>	Evaluation of <i>Boeremia foveata</i> against the criteria for DPs	Secretariat (?)

DUE DATE	ACTION	RESPONSIBLE
05 May 2013	Evaluation of <i>Bactericera cockerelli</i> (vector of <i>L. solanacearum</i> ) against the criteria for DPs	Norman Barr
10 May 2013	Redrafting of the QA document	Norman Barr, Mallik Malapatil, Delano James, Ana Lía Terra
30 May 2013	Posting of documents	Secretariat
24-28 June 2013	TPDP meeting 24-28 June 2013, EPPO headquarters, Paris, France	-
<b>6. Template/ standardized format for DPs for TPDP2013</b>		
28 February 2013	First draft (JC / FG) and sent to "core group" (Delano, Jane, Adriana, Hans, Ana Lia)	Jane Chard, Fabienne Grousset
30 March 2013	Comments from core group , and interaction to finalize draft	Delano James, Jane Chard, Adriana Moreira, Hans de Gruyter, Ana Lía Terra
30 April 2013	Draft sent to TPDP for comments	Secretariat
15 May 2013	TPDP send comments	ALL
30 May 2013	Document ready for posting	"Core group", Secretariat
<b>7. Preparing DPs for 2013 meeting: <i>Phytophthora ramorum</i>, <i>Anastrepha</i> spp., <i>Ditylenchus</i> spp., CTV and Phytoplasmas</b>		
2013-01-30 or before	Last deadline for draft DPs due to Secretariat; Submitted to expert consultation on the IPP	Leads, Secretariat
2013-03-30	Comments from experts sent by Secretariat to the discipline leads, who revise the drafts with authors (1 month)	Secretariat, Discipline leads
2013-04-30	Revised drafts sent to referees	Discipline leads
e.g. 05-10	Referees prepare comments and checklist	Referees
2013-05-20	Draft DPs, checklist by discipline lead and checklist by referees to Secretariat	Discipline leads
2013-05-30	Secretariat to review DPs and post on IPP (TPDP restricted work area)	Secretariat
<b>8. Preparing DPs for 2014 meeting: <i>Sorghum halepense</i></b>		
2013-01-30	Comments to Liping on <i>Sorghum halepense</i> , Redrafting with DP drafting group	ALL Yin Liping
2013-04-30	Liping sends new draft to TPDP for comments, and comments submitted by 30-06	Yin Liping ALL
2013-06-30	TPDP comments all sent, and Liping redrafts with DP drafting group	ALL Yin Liping
2013-09	Virtual meeting to validate	ALL
<b>9. Preparing DPs for 2014 meeting: <i>Liberibacter</i> spp., <i>Xanthomonas fragariae</i>, <i>Xylella fastidiosa</i>, <i>Fusarium</i> spp., <i>Puccinia psidii</i>, <i>Anoplophora</i> spp., <i>Bactrocera dorsalis</i>, <i>Liriomyza</i> spp., <i>Aphelenchoides</i> spp., <i>Bursaphelenchus xylophilus</i>, <i>Xiphinema americanum</i>, <i>Sorghum halepense</i>, <i>Tospoviruses</i></b>		
2013-10-30, preferably before	Last deadline for draft DPs due to Secretariat Submitted to expert consultation on the IPP (2 months expert consultation)	Discipline leads, Secretariat
2014-01-30	Comments from experts sent by Secretariat to the discipline leads, who revise the drafts	Secretariat
2014-03-30	Revised drafts sent to referees	Discipline leads

<b>DUE DATE</b>	<b>ACTION</b>	<b>RESPONSIBLE</b>
e.g. 04-15	Referee send comments and checklist	Referees
2014-04-30	Draft DPs, checklist by discipline lead and checklist by referees to Secretariat	Discipline leads
2014-05-15	Secretariat to review DPs and post on IPP (TPDP restricted work area)	Secretariat
<b>10. Regular update on status</b>		
ongoing	Update on DPs : leads update status document & send to Secretariat (reminder every three months or virtual meetings)	Discipline leads

## Appendix 9 – Expert Consultation Process

### Process for the Expert consultation for draft diagnostic protocols on the IPP

#### 1. Background and aim of the system

The TPDP expert consultation system on draft diagnostic protocols is an expert comment system on the International Phytosanitary Portal (IPP) with the objective to ensure improvement on quality for the development of a draft diagnostic protocol (DP), through inputs and feedback, in a scientific basis, from a wider number of experts worldwide not part of the DP drafting group. The expert consultation system aims at a wider consultation of experts on draft protocols at earlier stages of development to ensure the quality of the protocols and to facilitate the adoption process.

Note: At any stage in the development process, the DP drafting group may also need to request comments and input from other experts.

#### 2. Process for using the expert consultation system

- a. The discipline lead in collaboration with the author decides when a DP is ready to be subject to such a consultation.
- b. The discipline lead sends the draft protocol (two separate files: text and figures) to the Secretariat and asks for a specific consultation to be opened. The Secretariat should include in the draft DP a watermark or a sentence that indicates the text is an early draft under development, not for circulation / confidential document.
- c. The Secretariat opens the specific consultation, with a deadline for comment of 2-3 months (to be decided between the discipline lead and the Secretariat). Note: the general page of the expert consultation is public, i.e. visible to anybody, while pages for specific protocols need registration of experts wanting to comment.
- d. The Secretariat gives access to the discipline lead to the specific page, so that she/he may start monitoring comments during the commenting period, if wished.
- e. The Secretariat, discipline lead and other TPDP members “advertise” the specific consultation by transmitting a link to the general page of the expert consultation (see below for details). If requested by the discipline lead, the Secretariat should provide a letter inviting experts to comment, to be used by the discipline lead when requesting the participation of specific experts.
- f. An expert wishing to comment on a specific protocol sends a request to the moderator to register for that protocol. Note: such registration will allow keeping track automatically of the expert name, institution, country, expertise, and possibly to filter “spam” comments.
- g. The Secretariat registers the expert, who receives a link to the page for the specific protocol and a password (if not already registered on the IPP).
- h. The expert accesses the page for the specific protocol, and enters her/his comments as either a general post, or modified files for text/figures. All comments are centralized on the IPP.
- i. During the consultation period, the discipline lead has access to all comments, and can start reviewing them as needed.
- j. At the end of the consultation period, the Secretariat closes the consultation for the specific protocol. The Secretariat extracts comments and send them to the discipline lead (who in turn transmits them to the authors; the discipline lead should remove the names of the commenter’s prior to sending comments to the authors to avoid possible disputes). The extracted comments will consist of one “xls file” containing details (name, institution, country, expertise) of persons having commented and comments entered as posts, as well as separate DP files containing comments as track-changes in the text.

- k. If experts send comments directly to the lead author or discipline lead by email, instead of loading them on the IPP, the comments should be considered as others, but the discipline lead should inform the Secretariat.
- l. The discipline lead and authors review the comments and incorporate them as necessary. As decided at the 2010 TPDP meeting in Washington, the discipline lead or lead author are not requested to provide answers to all comments received, but they could keep track of substantial comments not integrated in the protocol. These may be included on the cover note for the draft protocol, in order to avoid the same comments being submitted again at later stages of adoption.
- m. The cover note of a draft protocol will indicate that such an expert consultation was held, its dates as well as all experts institutions who have commented.

***Advertising the opening of a consultation on a draft DP (above)***

Specific consultations are advertised to ensure that experts are widely aware of the draft protocols open for comment. In all cases, a link to the general page is sent, and it should be specified that access should be requested to the moderator. “Advertisement” is done as described below.

The discipline lead for the DP:

- Invites relevant experts to comment on the protocol via the expert consultation system on the IPP (see above).
- Identifies conferences/meetings that may provide opportunities to advertise the review process.

The Secretariat:

- Sends an email to NPPOs to announce the new consultation, and invites NPPOs to identify relevant experts/institutions, and either to forward them the link to the general consultation page or to ask the Secretariat to grant access to specified experts.
- Sends an email to RPPOs to announce a new consultation and invite them to advertise it to their relevant expert groups, as well as in their newsletters, bulletins, websites, etc.
- Posts a “hot topic” or “news item” on the IPP.
- Reminds the discipline lead to invite relevant experts to comment. Note: invitations to comment should normally be sent to individual experts by the discipline lead. In specific cases, and on request from the discipline lead, the Secretariat could send a request for comments directly to the expert or through her/his NPPO.
- Reminds TPDP members to suggest to the discipline lead experts to be consulted.
- Sends an email to the contact point in observer organisations (e.g. CBD).

TPDP members:

- Suggest to the discipline lead experts to be consulted.
- Advertise the specific consultation to relevant scientific societies etc., or suggest to the Secretariat the scientific societies etc. to be informed of the consultation, so that they can in turn inform their members (e.g. information bulletins, newsletters, websites, etc.).

**Appendix 10 – TPDP Medium Term Plan**

<b>TPDP Medium Term Plan</b>	
<b>Year</b>	<b>Activities</b>
<b>2013</b>	<ul style="list-style-type: none"> <li>• Submission of 2 DPs for SC approval (e-decision) for contracting parties notification period for adoption</li> <li>• Submission of 3 DPs for SC approval (e-decision) for member consultation</li> <li>• Expert consultation period on draft DPs: 6 draft DPs</li> <li>• Call for authors</li> <li>• Call for topics</li> <li>• Meeting preparation: Forecast of 5 draft DPs discussion</li> <li>• Meeting (24-28 June 2013, Paris, France)</li> </ul>
<b>2014</b>	<ul style="list-style-type: none"> <li>• Submission of 3 DPs for SC approval (e-decision) for contracting parties notification period for adoption</li> <li>• Submission of 5 DPs for SC approval (e-decision) for member consultation</li> <li>• Expert consultation period: 14 draft DPs</li> <li>• Call for authors (?)</li> <li>• Call for experts – Nematodes (?)</li> <li>• Meeting preparation: Forecast of 14 draft DPs discussion</li> <li>• Meeting (Paris, France)</li> </ul>
<b>2015</b>	<ul style="list-style-type: none"> <li>• Submission of 5 DPs for SC approval (e-decision) for contracting parties notification period for adoption</li> <li>• Submission of 15 DPs for SC approval (e-decision) for member consultation</li> <li>• Expert consultation period: 3 draft DPs</li> <li>• Call for experts – Viruses and <i>phytoplasmas</i> (?)</li> <li>• Meeting preparation: Forecast of 3 draft DPs discussion</li> <li>• Meeting</li> </ul>
<b>2016</b>	<ul style="list-style-type: none"> <li>• Submission of 15 DPs for SC approval (e-decision) for contracting parties notification period for adoption</li> <li>• Submission of 2 DPs for SC approval (e-decision) for member consultation</li> <li>• Meeting</li> </ul>
<b>2017</b>	<ul style="list-style-type: none"> <li>• Submission of 2 DPs for SC approval (e-decision) for contracting parties notification period for adoption</li> </ul>

## Appendix 11 – Working Priorities

### Review of working priorities: TPDP review of subjects against the criteria for the prioritisation of diagnostic protocols

**Background.** The SC requested the TPDP to review the working priorities for diagnostic protocols based on the *Criteria for the prioritization of diagnostic protocols*. Tables to be filled out by discipline lead were circulated at the beginning of 2012.

Proposals for changes to working priority are indicated in the table and will be presented to the SC in May 2013.

#### CONTENT

Appendix 11 – Working Priorities .....	71
Review of working priorities: TPDP review of subjects against the criteria for the prioritisation of diagnostic protocols.....	71
BACTERIA.....	72
FUNGI AND FUNGUS-LIKE ORGANISMS .....	76
INSECTS AND MITES.....	80
NEMATODES.....	85
PLANTS .....	88
VIRUSES AND PHYTOPLASMAS.....	90

[Bacteria](#)   [Fungi and fungus like organisms](#)   [Insects and mites](#)   [Nematodes](#)   [Plants](#)   [Viruses and phytoplasmas](#)

**BACTERIA**

Pest	<i>Erwinia amylovora</i>	<i>Liberibacter</i> spp. <i>Liberobacter</i> spp.	<i>Xanthomonas axonopodis</i> pv. <i>citri</i>	<i>Xanthomonas fragariae</i>	<i>Xyllela fastidiosa</i>
<b>Current working priority</b>	1	3 (change proposed, see conclusion)	1	4	2
<b>For information: Elements used for determining current working priority (in 2010)</b>	High priority in 2008 Importance of host plants and trade Advanced stage of development [additional information: Hosts concerned: <i>Rosaceae</i> , incl. major fruit and ornamental species; Climatic area: mostly temperate; Main pathway: infected plants Hosts are not food staple]	Importance of host plants and trade (so far covering citrus). But Normal priority in 2008 New <i>Liberibacter</i> spp. discovered since 2007 version of DP, which might require refocusing of DP or extending to new species Already citrus bacteria with top priority [additional information: Plants concerned in 2007 version: <i>Rutaceae</i> incl. <i>Citrus</i> Climatic area: mostly tropical for the citrus <i>Liberibacters</i> , temperate to tropical for new ones; Main pathway: plant material]	High priority in 2008 Importance of host plants and trade Advanced stage of development [additional information: Hosts: <i>Rutaceae</i> , incl. <i>Citrus</i> Climatic area: tropical to temperate – all citrus areas Main pathway: infected plants]	Normal priority in 2008 One host plant and one commodity class [additional information Plants concerned: strawberry Climatic area: temperate to tropical Main pathway: strawberry runners Some trade of planting material]	High priority in 2008 Importance of host plants and trade But also mostly temperate concern, and development not started/no discipline lead [additional information. Plants concerned: many hosts including grapevine, citrus, peach, other <i>Prunus</i> spp. Climatic area: temperate to subtropical? Main pathway: infected plants]

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Erwinia amylovora</i>	<i>Liberibacter</i> spp. <i>Liberobacter</i> spp.	<i>Xanthomonas axonopodis</i> pv. <i>citri</i>	<i>Xanthomonas fragariae</i>	<i>Xyllela fastidiosa</i>
Need for	<i>E. amylovora</i> is the	There is a need to have	Major quarantine	Direct isolation of the	Different strains of the same

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Erwinia amylovora</i>	<i>Liberibacter</i> spp. <i>Liberobacter</i> spp.	<i>Xanthomonas axonopodis</i> pv. <i>citri</i>	<i>Xanthomonas fragariae</i>	<i>Xylella fastidiosa</i>
international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	causal agent of fireblight disease, described as the most important bacterial disease of pear and apple. The disease is of concern where ever these crops are grown. Early infections are a challenge to detect reliably.	a consistent international approach to diagnosing emerging species in these genera. New species of <i>Liberibacter</i> have been discovered in recent years.	pathogen. There is a need for the diagnostic protocols to be harmonised to ensure all strains/variants are detected.	bacterium is difficult and diagnostic characteristics are very different to other <i>xanthomonas</i> . Potential to remain cryptic in asymptomatic nursery stock.	species cause disease across a number of economically significant hosts. There is a need to have a consistent internationally recognised protocol that will detect all strains of <i>Xylella fastidiosa</i> .
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Sensitive, validated, and harmonized testing is required to prevent pest movement and facilitate trade.	Nursery stock is the main pathway. Testing of host plants in post entry quarantine is a phytosanitary requirement for many countries for example, New Zealand and Australia.	Testing plant material is a phytosanitary requirement for many countries.	A quarantine pathogen in Europe. Importation of plant material has been implicated as the source of new outbreaks. There have been a number of incursions into Australia and New Zealand where early detection has resulted in eradication.	Many grapevine producing countries prohibit or restrict the movement of plant propagation material. Post entry quarantine and testing is a requirement for many countries.
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	<i>E. amylovora</i> has been detected in over 30 countries, including countries in North America, Europe, and in New Zealand. The pathogen has not been reported in areas such as Africa, Asia, Australia, and South America.	Major relevance for the citrus and <i>Solanacearum</i> hosts.	All citrus producing countries. Not present in Europe.	Most commercial strawberry growing areas are free of this pest. Only infects one host.	<i>Xylella fastidiosa</i> infects all grapevine species and has caused major economic losses in the USA. <i>Xylella</i> on citrus in Brazil caused infection rates of up to 63%.
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g.	Apples are the fourth most widely produced fruit in the world, after bananas, oranges and grapes (World Apple Review). They are an	Main pathogen for citrus producing countries. Has caused phytosanitary issues for <i>Solanacearum</i> hosts.	Relevant to all citrus producing countries. Citrus canker is a costly disease and detection has an impact on commerce resulting in	Limited to strawberry plants. Could be an issue to obtain germplasm.	Infects > 50 hosts across a wide range of plant families. Is a major pathogen of grapevine. Europe and Australasia remain free of the disease. Has been intercepted on imported nursery stock during

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Erwinia amylovora</i>	<i>Liberibacter</i> spp. <i>Liberobacter</i> spp.	<i>Xanthomonas axonopodis</i> pv. <i>citri</i>	<i>Xanthomonas fragariae</i>	<i>Xyllela fastidiosa</i>
relevant to many countries or of major importance to a few countries).	important trade commodity.		restrictions to international movement of nursery stock and fruit.		phytosanitary inspection.
Other criteria for topics as determined by CPM that are relevant to determining priorities [see at the end of this document]	The affected hosts are grown in many countries, and the pathogen poses a significant economic threat to susceptible cultivars	Diagnostics are readily been developed in this field and the current draft protocol may become outdated.	Direct relevance to developing countries that have citrus canker and to those that wish to maintain area freedom and are seeking market access. For example, pacific island countries and parts of Asia.		
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	This pest is of importance to different and broad climatic zones, since there are many cultivars suitable cultivation in a broad range of climates including temperate and sub-tropical regions.	Mostly tropical for the citrus <i>Liberibacters</i> , temperate to tropical for new ones.	Tropical to temperate.	Mainly temperate	Temperate to sub-tropical
Number of labs undertaking the diagnosis.	Global need.	Many laboratories in Europe, USA, South America, New Zealand and Australia.	Many – all plant pathology laboratories in citrus producing countries would have laboratories with varying capability to diagnose this pathogen.	Many – all plant pathology laboratories in strawberry growing countries free of this disease would have varying capabilities to diagnose this pathogen.	Many – all plant pathology laboratories in grape growing countries would have varying capabilities to detect this pathogen.

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Erwinia amylovora</i>	<i>Liberibacter</i> spp. <i>Liberobacter</i> spp.	<i>Xanthomonas axonopodis</i> pv. <i>citri</i>	<i>Xanthomonas fragariae</i>	<i>Xylella fastidiosa</i>
Feasibility of production of a protocol, including availability of knowledge and expertise.	Very feasible. Validated methods exist.	A number of experts available in several countries.	Protocol well developed availability of authors etc. Numerous scientific papers on the identification and diagnosis of the citrus canker pathogen.	A number of experts available in several countries.	Protocol well developed availability of authors etc. Numerous scientific papers on the identification and diagnosis of the citrus canker pathogen.
<b>CONCLUSIONS:</b> Summary of the review. Does the subject meet the criteria?	Definitely Yes	The subject meets the review criteria. The <i>Liberibacter</i> species are an important group of pathogens.	The subject meets many aspects of the review criteria. Citrus canker is a disease that causes significant economical losses to the citrus industry worldwide and remains a biosecurity threat to all citrus growing areas.	The subject meets the review criteria. Angular leaf spot is a significant disease on strawberry and many countries are free of this disease.	The subject meets the review criteria. <i>Xylella fastidiosa</i> is a major quarantine pathogen for many countries free of this disease.
In addition, is the current working priority appropriate, or should it be modified (with reasons)	No	A working priority of 2 is appropriate in comparison to the other diagnostic protocols for bacteria. A parallel proposal will be made to the SC so that this subject covers HLB in one protocol, and <i>L. solanacearum</i> in another.	A significant body of work has been conducted on diagnostic development and a priority rating of 1 is appropriate.	A working priority of 4 is appropriate in comparison to the other diagnostic protocols for bacteria.	A working priority of 2 is appropriate.
Possible change envisaged to the scope of the DP (with reasons)	None	No	No	No	No

## FUNGI AND FUNGUS-LIKE ORGANISMS

Pest	<i>Fusarium moniliformis/moniforme</i> syn. <i>F. circinatum</i>	<i>Guignardia citricarpa</i>	<i>Gymnosporangium</i> spp	<i>Phytophthora ramorum</i>	<i>Puccinia psidii</i>	<i>Tilletia indica</i> / <i>T. controversa</i>
<b>Current working priority</b>	2	1	4	3 (change proposed, see conclusion)	2	1
<b>For information: Elements used for determining current working priority (in 2010)</b>	<p>High priority in 2008 One host plant, several commodity classes, one of the most important forest trees</p> <p>But Temperate concern mostly, less of a priority than the first two. [additional information. Plants: <i>Pinus</i> Climatic area: temperate to subtropical? Main pathway: seeds, plants for planting]</p>	<p>Normal priority in 2008 But ready in April 2011 for SC prior to MC Important crop for many countries</p> <p>[additional information Plants: <i>Rutaceae</i>, esp. <i>Citrus</i> Commodity classes for diag: fruits, plants]</p>	<p>Normal priority in 2008 Important crops but limited trade compared to others? [additional information Plants concerned: <i>Juniperus</i>, <i>Rosaceae</i>, incl. apple Main pathway: plants]</p>	<p>High priority in 2008 Relatively important hosts for many countries Already advanced But mostly temperate concern Progress on diagnostic made since added to the work programme. [additional information Plants concerned: many forest and ornamental trees and bushes Climatic area: temperate Main pathway: plants for planting Some trade, especially for ornamental]</p>	<p>High priority in 2008 Relatively important hosts, many pathways, applies to tropical and subtropical areas (not addressed in many other subjects) [additional information Plants: <i>Myrtaceae</i>, incl. <i>Eucalyptus</i>, guava Climatic area: tropical/subtropical? Main pathway: plants for planting (wood?), seed]</p>	<p>High priority in 2008 Ready in April 2011 for SC prior to MC Important crop for all countries, large trade [additional information Plants: mostly wheat Main pathway: seeds]</p>
<b>2012 CHECK AGAINST CRITERIA (are they met, how etc.)</b>	<i>Fusarium moniliformis/moniforme</i>	<i>Guignardia citricarpa</i>	<i>Gymnosporangium</i> spp	<i>Phytophthora ramorum</i>	<i>Puccinia psidii</i>	<i>Tilletia indica</i> / <i>T. controversa</i>
Need for international	The morphological identification of	Intercontinental	Taxonomy of <i>Gymnosporangium</i>	Many molecular diagnostic methods	International harmonisation	International harmonisation

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Fusarium moniliformis/moniforme</i>	<i>Guignardia citricarpa</i>	<i>Gymnosporangium</i> spp	<i>Phytophthora ramorum</i>	<i>Puccinia psidii</i>	<i>Tilletia indica</i> / <i>T. controversa</i>
harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	<i>Fusarium</i> is complex, there is a need for diagnostic standards	harmonisation needed	species is complex, many species are local in specific areas	have been developed , needs for harmonisation	needed	needed, new methods became available recently
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Diagnosis important from preventing spread in new areas, and eradication after new findings	Diagnosis important from preventing spread in new areas	Normal to low, limited trade of plant material.	Diagnosis important to prevent further spread of the diseases, especially to new areas. Prevention the spread of the specific mating types of the species	Diagnosis important to prevent further spread of the diseases in infected aereas, and on <i>myrtaceous</i> nursery stock import to prevent introduction	Diagnosis important from preventing spread in new areas
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	The main host is <i>Pinus radiata</i> , exotic tree in plantations worldwide. Also other <i>Pinus</i> spp and <i>Pseudotsuga menziesii</i> are susceptible	Specific pathogen on <i>Citrus</i> spp., major importance for fruit producing countries, absent in Europe	<i>Gymnosporangium</i> species are important , specific pathogens, on a global level, but species often with restricted occurrence	Host plants are diverse, relevant to many countries worldwide	Mainly on <i>Myrtaceae</i> , native to the warmer regions of the western hemisphere (Argentina to Florida in the USA)	<i>Tilletia indica</i> is an important pathogen on wheat, relevant to many countries
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	Regulated organism in many countries, commodity concerned are seeds and plant material	High volumes of trade, commodity concerned are mainly fruits. Relevant for many countries	Limited trade of plant material	High volumes of trade, many (ornamental) plant species involved	Nursery stock	High volumes of trade of seeds
Other criteria for topics as determined by CPM	Diagnostic protocols already exists at regional level	Diagnostic protocols already exists at regional level	Diagnostic protocol exists at regional level	Diagnostic protocols already exists at regional level	Diagnostic methods described in literature	Diagnostic protocol exists at regional level

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Fusarium moniliformis</i> /moniforme	<i>Guignardia citricarpa</i>	<i>Gymnosporangium</i> spp	<i>Phytophthora ramorum</i>	<i>Puccinia psidii</i>	<i>Tilletia indica</i> / <i>T. controversa</i>
that are relevant to determining priorities [see at the end of this document]						
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	<i>F. circinatum</i> is mainly confined to regions with Mediterranean or subtropical climate	High financial consequences for fruit producing areas	Locally important.	Mainly temperate zones	Tropical/subtropical	Climatic area is wide
Number of labs undertaking the diagnosis.	Many	Many	No data	Many	Many	Many
Feasibility of production of a protocol, including availability of knowledge and expertise.	Feasible	Feasible	Knowledge and expertise available, but many species involved	Feasible	Feasible	Feasible
<b>CONCLUSIONS: Summary of the review. Does the subject meet the criteria.</b>	<b>High priority, subject meets the criteria, international harmonization of the diagnostic techniques is very important, knowledge and expertise available.</b>	<b>No changes, still an important disease with high impact on intercontinental trade of citrus fruits. International harmonisation of detection methods is important.</b>	<b>Normal to lower priority, limited trade of plant material. Protocol is complex, with many locally occurring species involved, approach and scope of the protocol need to be reconsidered.</b>	<b>High priority, the disease is still expanding in certain areas including new host plants. New diagnostic methods have been developed, international harmonisation is needed. Important disease considering the wide trade of ornamentals.</b>	<b>High priority, recent papers dealing with taxonomy and spread of the disease, international harmonisation needed, tropical/subtropical, spread by nursery stock, expanding, recent found in Australia.</b>	<b>High priority, protocol provides the latest developments of diagnostic methods, needed for international harmonisation.</b>
In addition, is the	Priority 2 is	-	-	A priority 2 is	Priority 2 is	-

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Fusarium moniliformis</i> /moniforme	<i>Guignardia citricarpa</i>	<i>Gymnosporangium</i> spp	<i>Phytophthora ramorum</i>	<i>Puccinia psidii</i>	<i>Tilletia indica</i> / <i>T. controversa</i>
current working priority appropriate, or should it be modified (with reasons)	appropriate			proposed.	appropriate.	
Possible change envisaged to the scope of the DP (with reasons)	-	-	-	-	-	-

**INSECTS AND MITES (note: *Thrips palmi* and *Trogoderma granarium* are not included in the table below)**

Pest	<i>Anastrepha</i> spp.	<i>Anoplophora</i> spp.	<i>Bactrocera dorsalis</i> complex	<i>Dendroctonus ponderosae</i>	<i>Ips</i> spp.	<i>Liriomyza</i> spp.	<i>Tephritidae</i> : molecular
<b>Current working priority</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>1</b>
<b>For information: Elements used for determining current working priority (in 2010)</b>	<p>High priority in 2008 Advanced development Important hosts Linked to <i>Tephritidae</i> below (same priority)</p> <p>[additional information Plants: Many fruit species Climatic area: tropical/subtropical Main pathway: fruits, plants Large trade]</p>	<p>Normal priority in 2008 [additional information: Plants: many woody plants Climatic area: wide Main pathway: bonsais, plants, wood, wpm Trade]</p>	<p>High priority in 2008 Important hosts but already two fruit fly protocols as high priority</p> <p>[additional information: Plants concerned: Many fruit species Climatic area: tropical/subtropical Main pathway: fruits, plants Large trade]</p>	<p>High priority in 2008 One host plant, several commodity classes, one of the most important forest trees, temperate areas concern. Importance of host plants and trade, but wood covered by ISPM 15. Of the four <i>Pinus</i> DPs, <i>F. circinatum</i> or <i>B. xylophilus</i> which are the most needed? Same author as <i>Ips</i> below, same difficulty to start the work. Would have the same priority as <i>Ips</i>, but only one pest in this one, so allocated 3 here and 4 to <i>Ips</i>. [additional information Plants concerned: <i>Pinus</i> Climatic area: Temperate Main pathway: bark, wood, plants]</p>	<p>High priority in 2008 One host plant, several commodity classes, one of the most important forest trees Importance of host plants and trade, but wood covered by ISPM15 Of the four <i>Pinus</i> DPs, <i>F. circinatum</i> or <i>B. xylophilus</i> which are the most needed? [additional information Plants: <i>Pinus</i> Climatic area: all? Main pathway: bark, wood, plants]</p>	<p>High priority in 2008 Many hosts and large trade. Many countries concerned [additional information. Plants concerned. Many vegetables and ornamentals Climatic areas: all Main pathways: planting material, cut flowers, etc.]</p>	<p>High priority in 2008 Important hosts Linked to <i>Tephritidae</i> below [additional information) Plants: Many fruit species Climatic area: tropical/subtropical Main pathway: fruits, plants Large trade</p>

2012 CHECK AGAINST CRITERIA (are they met, etc.)	<i>Anastrepha</i> spp.	<i>Anoplophora</i> spp.	<i>Bactrocera dorsalis</i> complex	<i>Dendroctonus ponderosae</i>	<i>Ips</i> spp.	<i>Liriomyza</i> spp.	<i>Tephritidae</i> : molecular
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	DP in advanced stage of development for morphological techniques; molecular ones have been left out (see below)	It is necessary	It is necessary	It is necessary	It is necessary	Protocol is advanced and is in early draft stage	
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial	Very relevant as accurate species id is crucial
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	Plants concerned: Many fruit species	Plants: many woody plants	Plants concerned: Many fruit species	One host plant <i>Pinus</i> , several commodity classes, one of the most important forest trees, temperate areas concern	One host plant <i>Pinus</i> , several commodity classes, one of the most important forest trees, temperate areas concern	Many vegetables and ornamentals. Relevant to many countries in different climatic areas	Plants: Many fruit species
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	Large trade, relevant to many countries	plants, wood, wpm Trade]	Large trade, relevant to many countries	Importance of host plants and trade, but wood covered by ISPM 15	Importance of host plants and trade, but wood covered by ISPM 15	Large trade globally, and relevant to many countries	Large trade
Other criteria for topics as determined by CPM that are relevant to determining priorities	Meets some core criteria	Meets some core criteria	Meets several core criteria	Meets some core criteria	Meets some core criteria	Meets several core criteria	Meets several core criteria

<b>2012 CHECK AGAINST CRITERIA (are they met, etc.)</b>	<b><i>Anastrepha</i> spp.</b>	<b><i>Anoplophora</i> spp.</b>	<b><i>Bactrocera dorsalis</i> complex</b>	<b><i>Dendroctonus ponderosae</i></b>	<b><i>Ips</i> spp.</b>	<b><i>Liriomyza</i> spp.</b>	<b><i>Tephritidae:</i> molecular</b>
[see at the end of this document]							
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	Climatic area: tropical/subtropical Main pathway: fruits, plants	Climatic area: wide Main pathway: bonsais,	Climatic area: tropical/subtropical Main pathway: fruits, plants	Climatic area: Temperate Main pathway: bark, wood, plants	Climatic area: Temperate Main pathway: bark, wood, plants	Climatic areas: all Main pathways: planting material, cut flowers, etc.	Climatic area: tropical/subtropical Main pathway: fruits, plants
Number of labs undertaking the diagnosis.	Few	Few, globally	Few labs globally, but limited number particularly in developing countries of Asia	A few globally	A few globally	Few labs globally, but limited number in developing countries of Asia, Africa and South America	A few globally, particularly in the US, Europe & Australia

2012 CHECK AGAINST CRITERIA (are they met, etc.)	<i>Anastrepha</i> spp.	<i>Anoplophora</i> spp.	<i>Bactrocera dorsalis</i> complex	<i>Dendroctonus ponderosae</i>	<i>Ips</i> spp.	<i>Liriomyza</i> spp.	<i>Tephritidae</i> : molecular
Feasibility of production of a protocol, including availability of knowledge and expertise.	Some relevant expertise and resources already available in certain countries. These could be pooled together to produce a protocol usable by a wide range of countries / clients.	Some relevant expertise and resources already available in a couple of countries	Some relevant expertise and resources already available in certain countries. These could be pooled together to produce a protocol usable by a wide range of countries / clients	Same authors as <i>Ips</i> , same difficulty to start the work, since the lead author and other authors (except one) are not contactable. Suggest re-advertising and re-assembling the editorial team. This DP would have the same priority as <i>Ips</i> but only one pest in this one, why? Discussion required to decide whether this DP be based on multiple pest species of <i>Dendroctonus</i> rather than single species as proposed now. EPPO /CABI have at least 6 species of this genus as quarantine pests.	Same author as <i>Dendroctonus</i> , same difficulty to start the work, since the lead author and other authors are not contactable. Suggest re-advertising and re-assembling the editorial team.	Some relevant expertise and resources already available in certain countries. These could be pooled together to produce a protocol usable by a wide range of countries	Recent data suggest that this is not possible for many pests (see details in the TPDP report)
<b>CONCLUSIONS: Summary of the review. Does the subject meet the criteria.</b>	Yes	Yes	Yes	Yes	Yes	Yes, certainly	Yes
In addition, is the current working priority appropriate, or should it be modified (with reasons)	Yes, appropriate	Yes, appropriate	Yes, appropriate	Yes, appropriate	Yes, appropriate, because the same authors would complete the <i>Dendroctonus</i> DP first.	Yes, appropriate, no changes required	Yes, appropriate, but due to lack of feasibility a proposal is being made to put this

2012 CHECK AGAINST CRITERIA (are they met, etc.)	<i>Anastrepha</i> spp.	<i>Anoplophora</i> spp.	<i>Bactrocera dorsalis</i> complex	<i>Dendroctonus ponderosae</i>	<i>Ips</i> spp.	<i>Liriomyza</i> spp.	<i>Tephritidae:</i> molecular
							subject on hold.
Possible change envisaged to the scope of the DP (with reasons)	No	No	No	As explained above, the DP should include other major pest spp of the genus.	No	No	No

**NEMATODES**

<b>Pest</b>	<b><i>Aphelenchoides besseyi</i>, <i>A. ritzemabosi</i> and <i>A. Fragariae</i></b>	<b><i>Bursaphelenchus xylophilus</i></b>	<b><i>Ditylenchus destructor</i> / <i>D. dipsaci</i></b>	<b><i>Xiphinema americanum</i></b>
<b>Current working priority</b>	<b>1 (change proposed, see conclusion)</b>	<b>2</b>	<b>1</b>	<b>4</b>
<b>For information: Elements used for determining current working priority (in 2010)</b>	High priority in 2008 Wide range of hosts, incl. rice [additional information: Plants: strawberry, rice, ornamentals, grasses, etc Climatic area: wide Main pathway: rice seeds, strawberry, plants]	High priority in 2008 Maybe the most important pest of Pinus in the list? (that one or <i>F. circinatum</i> ) [additional information: Plants concerned: mainly Pinus Climatic area: temperate Main pathway: wood incl. Wood chips]	High priority in 2008 Important crops, large trade Already advanced draft [additional information. Plants concerned: wide range, incl. ornamental plants, crop plants and weeds. Potato, sweet potato, are main hosts of destructor. <i>Gramineae</i> , <i>solanaceae</i> , etc for <i>dipsaci</i> . Climatic area: all, esp. damaging in temperate areas Main pathway: seed, planting material]	<ul style="list-style-type: none"> <li>• Normal priority in 2008</li> <li>• Important to distinguish virus vector <i>Xiphinema</i> from non-virus vectors</li> </ul> [additional information Plants concerned: non-specific, virus vector Climatic area: all Main pathway: soil (with plants or without)]

<b>2012 CHECK AGAINST CRITERIA (are they met, how etc.)</b>	<b><i>Aphelenchoides besseyi</i>, <i>A. ritzemabosi</i> and <i>A. Fragariae</i></b>	<b><i>Bursaphelenchus xylophilus</i></b>	<b><i>Ditylenchus destructor</i> / <i>D. dipsaci</i></b>	<b><i>Xiphinema americanum</i></b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	International harmonisation desirable	Risk of confusion between numerous species. Important consequences for wood trade.	International harmonisation desirable	International harmonisation desirable, especially because of difficult diagnostic.
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Diagnosis important from preventing spread in new areas.	Diagnosis very important to identify outbreaks and management of such outbreak.	Diagnosis important from preventing spread in new areas. With reduction of chemical treatment, risk of new outbreaks, that could be early identified with a relevant diagnosis.	Diagnosis important from preventing spread in new areas

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Aphelenchoides besseyi</i> , <i>A. ritzemabosi</i> and <i>A. Fragariae</i>	<i>Bursaphelenchus xylophilus</i>	<i>Ditylenchus destructor</i> / <i>D. dipsaci</i>	<i>Xiphinema americanum dipsaci</i>
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	Depending of the species, major importance for some countries ( <i>A. besseyi</i> critical for rice production) or relevant for many countries (e.g. <i>A. fragariae</i> for strawberry).	Distribution limited to few countries/regions, but major importance in this region and management of the pest very difficult. <i>Pinaceae</i> are main hosts and other conifers are minor hosts. Different pathways related with wood and wood products are possible.	Pest widespread. Numerous crop and non crop hosts Main pathways: seeds, bulbs, tubers and planting material + other minor pathways.	Limited distribution to USA. No specific hosts (fruit trees, herbaceous ornamental plants, woody plants), but associated with soil or growing medium.
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	<i>A. besseyi</i> is widely regulated at regional level. But the two other species are less regulated. Commodity concerned are seeds or plants for planting, thus of major importance to few / several countries.	Diagnostic procedures mainly focus on wood trade and wood products. Different regions and countries have regulations for that pest (COSAVE, APPPC, EU, EPPO, Argentina, Chile, Brazil, Paraguay, Uruguay, China, Israel, Jordan, Kazakhstan, Azerbaijan, Moldova, Ukraine, Turkey, Russia	Various and numerous plant products can be subjected to the diagnostic procedure, with possible dispute if no harmonized procedure available. Regulated pests in many regions and countries.	Regulated pest in EPPO, EU regions, Turkey and Israël.
Other criteria for topics as determined by CPM that are relevant to determining priorities [see at the end of this document]	Diagnostic protocol already exists at regional level	Diagnostic protocol already exists at regional level Difficulty in continuing the protocol development process	Diagnostic protocol already exists at regional level	Diagnostic protocol already exists at regional level
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	<i>A. besseyi</i> mainly occurs in tropical regions, whereas <i>A. fragariae</i> and <i>A. ritzemabose</i> occur in temperate regions. Host range rather limited. So the all protocol covers pests and plants of various areas.	Other pests of coniferous or <i>Pinaceae</i> don't have as dramatic consequences as <i>Bursaphelenchus xylophilus</i> .	Pest occurring in temperate area Major pest when considering yield loss and qualitative damage.	Pest occurring in temperate area Not a major pest when considering damage or yield loss
Number of labs undertaking the diagnosis.	Numerous	numerous	numerous	No data
Feasibility of production of a protocol, including availability	Feasible	Feasible	Feasible	Theoretically feasible, but facing continuous improvement/development of

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Aphelenchoides besseyi</i> , <i>A. ritzemabosi</i> and <i>A. Fragariae</i>	<i>Bursaphelenchus xylophilus</i>	<i>Ditylenchus destructor</i> / <i>D. dipsaci</i>	<i>Xiphinema americanum</i>
of knowledge and expertise.				molecular identification tools
<b>CONCLUSIONS:</b> Summary of the review. Does the subject meet the criteria.	The subject meets the criteria.	The subject meets the criteria.	The subject meets the criteria.	The subject meets the criteria.
In addition, is the current working priority appropriate, or should it be modified (with reasons)	It is proposed that the priority be change as 2, according to the elements provided. Expertise probably available.	Can be kept as 2, according to the elements provided : important pest and high damage if introduced in <i>Pinaceae</i> stand.	Can be kept as 1, according to the elements provided. Current draft protocol in an advanced stage.	Can be kept as 4, because improvement under process and available diagnostic protocols are lacking the new molecular approaches for reliable diagnostic.
Possible change envisaged to the scope of the DP (with reasons)	No	No	No	No

## PLANTS

<b>Pest</b>	<b><i>Sorghum halepense</i></b>	<b><i>Striga</i> spp.</b>
<b>Current working priority</b>	<b>1</b>	<b>1</b>
<b>For information: Elements used for determining current working priority (in 2010)</b>	<b>High priority in 2008 All areas and relate to seed trade Already advanced draft [additional information: Serious weed in many crops; Climatic area: all; Main pathway: as contaminant of seed and grain]</b>	<b>High priority in 2008 Important for subsistence agriculture Considered a priority 1 even if not ready to start [additional information: Plants: esp. Corn, sorghum and sugarcane; Climatic area: mostly subtropical/tropical]</b>
<b>2012 CHECK AGAINST CRITERIA (are they met, how etc.)</b>	<b><i>Sorghum halepense</i></b>	<b><i>Striga</i> spp.</b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	International harmonisation desirable. This kind pest is mixed in grain.	International harmonisation desirable
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Diagnosis important from preventing spread in new areas. And relevant as accurate species id is crucial	Diagnosis important from preventing spread in new areas. And relevant as accurate species id is crucial
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	Pest widespread Numerous crop and non crop hosts it is easily in many countries colonization	Pest widespread Numerous crop and non crop hosts it is easily in many countries colonization
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	Diagnostic procedures mainly focus on grain trade and grain products. Regulated pest in USA, China and some countries	Regulated pest in USA, China and South American country
Other criteria for topics as determined by CPM that are relevant to determining priorities [see at the end of this document]	Many affected crop are grown in many countries, and has a significant economic threat to susceptible cultivars	The affected crop are grown in many countries, and has a significant economic threat to host crop
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	Pest occurring in temperate/tropical areas Major pest when considering yield loss and qualitative damage.	Pest occurring in temperate/tropical areas Major pest when considering yield loss and qualitative damage.
Number of labs undertaking the diagnosis.	Numerous	No data
Feasibility of production of a protocol, including	Theoretically feasible, but facing continuous	Theoretically feasible, but facing continuous

availability of knowledge and expertise.	improvement/development expert	improvement/development expert
<b>CONCLUSIONS:</b> Summary of the review. Does the subject meet the criteria.	<b>The subject meets the criteria.</b>	<b>The subject meets the criteria.</b>
<b>In addition, is the current working priority appropriate, or should it be modified</b>	<b>Can be kept , according to the elements provided. Current draft protocol in an advanced stage.</b>	<b>Can be kept.</b>
<b>Possible change envisaged to the scope</b>	<b>No</b>	<b>No</b>

**VIRUSES AND PHYTOPLASMAS (note: *Plum pox virus* is not in the table below)**

<b>Pest</b>	<b><i>Citrus tristeza virus</i></b>	<b>Phytoplasmas (general)</b>	<b><i>Potato spindle tuber viroid</i></b>	<b>Tospoviruses (TSWV, INSV, WSMV)</b>	<b>Viruses transmitted by <i>Bemisia tabaci</i></b>
<b>Current working priority</b>	<b>3 (change proposed, see conclusion)</b>	<b>4 (change proposed, see conclusion)</b>	<b>1</b>	<b>1</b>	<b>2</b>
<b>For information: Elements used for determining current working priority (in 2010)</b>	<p>Normal priority in 2008 Important crop but lower priority in 2008 Less important than other Citrus DPs on the programme Suggested that this and next one are 3 and 4, depending of which one is more needed [additional information: Plants concerned: Citrus and relatives Climatic area: wide Main pathway: budwood, also infested aphids]</p>	<p>Normal priority in 2008 Very wide protocol</p>	<p>High priority in 2008 Potato [additional information Plants concerned: potato, also tomato, other <i>Solanum</i> spp. Climatic area: wide Main pathway: potato tubers, germplasm, tomato seed]</p>	<p>High priority in 2008 Important hosts and trade [additional information Plants: wide range, incl. ornamental, vegetables, weeds. One important host: tomato Climatic area: wide Main pathway: plants and vector (<i>Thrips palmi</i>)]</p>	<p>High priority in 2008 Scope not redefined yet</p>

<b>2012 CHECK AGAINST CRITERIA (are they met, how etc.)</b>	<b><i>Citrus tristeza virus</i></b>	<b>Phytoplasmas (general)</b>	<b><i>Potato spindle tuber viroid</i></b>	<b>Tospoviruses (TSWV, INSV, WSMV)</b>	<b>Viruses transmitted by <i>Bemisia tabaci</i></b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	<i>Citrus tristeza virus</i> (CTV) has been described as causing the most economically important disease of citrus worldwide, and it has had a serious impact on the cultivation and trade of citrus. CTV is characterized by enormous genetic diversity, hence broad spectrum reliable detection is necessary but challenging.	There are many phytoplasmas of economic importance affecting many crops. Although similar to bacteria, phytoplasmas cannot be cultured in vitro and must be maintained in plant hosts. Also they are transmitted by vectors such as leaf hoppers.	PSTVd has a very wide host range and it produces a disease that varies in severity depending on the host and environment. The disease is of concern where ever these crops are grown, since it may cause high crop losses.	These viruses have a wide host range and can cause severe disease in several high value field and greenhouse crops such as tomatoes. The viruses are spread by vectors and are often difficult to detect and identify	The vector <i>Bemisia tabaci</i> transmits a range of viruses that include both DNA and RNA viruses, some of which are quite harmful to cultivated crops.

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Citrus tristeza virus</i>	Phytoplasmas (general)	<i>Potato spindle tuber viroid</i>	Tospoviruses (TSWV, INSV, WSMV)	Viruses transmitted by <i>Bemisia tabaci</i>
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Harmonization and standardization of diagnostic tools are essential to minimize false negatives, conflicts and trade disputes.	Due to their wide distribution, wide host range, disease symptomatology, and difficulty to differentiate from bacteria, validated standardized assays are necessary.	Sensitive, validated, and harmonized testing is required to prevent pest movement and facilitate trade.	reliably. Reliable detection is an essential component of managing and controlling these pests.	Viruses transmitted by this vector are variable and in some cases cause significant crop damage.
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	It is believed that CTV coevolved with its citrus host which has origins in South East Asia and the Malayan Archipelago. CTV has caused major epidemics in countries in Europe and North and South America, and is a concern in every country where citrus is grown.	Wide host range with phytoplasmas affecting fruit quality, plant viability, and the fact that they are insect vectored poses an additional threat.	PSTVd is of serious concern where ever potatoes are grown. It may cause crop losses as high as 64%, in some susceptible cultivars. The wide host range makes it a challenge to control once introduced into an area.	The affected crops are grown as field crops or greenhouse crops in temperate and tropical countries.	The vector is widely distributed, and is of concern in many countries.
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	Citrus are in the top 5 most widely cultivated crops in the world, and control and diagnosis of CTV is important and relevant to many countries.	Phytoplasmas infect many crops of international significance.	Potatoes are consumed globally and are an important source of carbohydrates.	Significant global trade	Relevant to many countries
Other criteria for topics as determined by CPM that are relevant to determining priorities [see at the end of this document]	The genetic diversity seen in this virus has resulted in the identification of strains and isolates that cause different diseases with different cultivars and under different conditions.	Since phytoplasmas are closely related to bacteria, development of assays specific to phytoplasmas is very challenging. Assays are often non-specific and multiple steps such as PCR followed by RFLP analyses are required for identification.	The affected hosts are grown in many countries, and the pathogen poses a significant economic threat to susceptible cultivars	Pressing and ongoing issue of concern.	Both the vector and the viruses vectored by the insect affect a wide range of crops, and cause significant crop damage.
Balance between pests of importance in different	This pest is of great concern where ever citrus is grown,	There are phytoplasmas that are of concern in broad	This pest is of importance to different and broad climatic	This is a pest of concern in all	Of importance to many countries in

<b>2012 CHECK AGAINST CRITERIA (are they met, how etc.)</b>	<b><i>Citrus tristeza virus</i></b>	<b>Phytoplasmas (general)</b>	<b><i>Potato spindle tuber viroid</i></b>	<b>Tospoviruses (TSWV, INSV, WSMV)</b>	<b>Viruses transmitted by <i>Bemisia tabaci</i></b>
climatic zones (temperate, tropics etc) and commodity classes.	and this covers all continents, many countries and climatic zones.	geographic regions.	zones, since there are many cultivars suitable for cultivation in a broad range of climates including temperate and sub-tropical regions.	geographic regions.	various climatic zones.
Number of labs undertaking the diagnosis.	Globally, where ever citrus is grown.	Globally	Globally	Globally	The viruses transmitted by the vector are of concern globally.
Feasibility of production of a protocol, including availability of knowledge and expertise.	Feasible. A considerable amount of work has been done on the development of bioassays, and protein and nucleic acid based assays.	The main technique used to detect phytoplasmas is PCR. Many PCR procedures have been described, targeting various genes/regions of the genome.	Very feasible. Validated methods exist.	Standardized tests would facilitate trade and be an asset for conflict resolution.	Since the vector transmits a diverse range of viruses, DNA and RNA, it has been recommended that the scope of the DP be changed to focus on one genus ( <i>Begomovirus</i> ), for which the feasibility of standardized testing is greater.
<b>CONCLUSIONS: Summary of the review. Does the subject meet the criteria.</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>In addition, is the current working priority appropriate, or should it be modified (with reasons)</b>	<b>Should be identified as high priority. A priority 2 is proposed</b>	<b>It is proposed that the priority is changed to 2.</b>	<b>No</b>	<b>No</b>	<b>No</b>

2012 CHECK AGAINST CRITERIA (are they met, how etc.)	<i>Citrus tristeza virus</i>	Phytoplasmas (general)	<i>Potato spindle tuber viroid</i>	Tospoviruses (TSWV, INSV, WSMV)	Viruses transmitted by <i>Bemisia tabaci</i>
Possible change envisaged to the scope of the DP (with reasons)	No	The assays used for phytoplasma detection are often broad spectrum; however validation may exist for certain pests only.	No	Depending on available assay validation, it may be necessary to prioritize and identify a specific virus initially. This can be determined by lead author(s).	Yes. A discussion paper has been produced that justifies changing the scope of the DP.

## **CPM Criteria for justification and prioritization of proposed topics (from Procedures and criteria for identifying topics for inclusion in the List of topics for IPPC standards)**

### **Core criteria**

- Contribution to the purpose of the IPPC as described in article I.1.
- Feasibility of implementation at the global level (includes ease of implementation, technical complexity, capacity of NPPOs to implement, relevance for more than one region).
- Clear identification of the problems that need to be resolved through the development of the standard.
- Availability of, or possibility to collect, information in support of the proposed standard (e.g. scientific, historical, technical information, experience).

### **Supporting criteria**

#### ***Practical***

- Feasibility of adopting the proposed standard within a reasonable time frame.
- Stage of development of the proposed standard (is a standard on the same topic already widely used by NPPOs, RPPOs or a relevant international organization).
- Availability of expertise needed to develop the proposed standard.

#### ***Economic***

- Estimated value of the plants protected.
- Estimated value of trade affected by the proposed standard (e.g. volume of trade, value of trade, the percentage of Gross Domestic Product of this trade) if appropriate.
- Estimated value of new trade opportunities provided by the approval of the proposed standard.
- Potential benefits in terms of pest control or quarantine activities.

#### ***Environmental***

- Utility to reduce the potential negative environmental consequences of certain phytosanitary measures: for example reduction in global emissions for the protection of the ozone layer.
- Utility in the management of non indigenous species which are pests of plants (such as some invasive alien species).
- Contribution to the protection of the environment, through the protection of wild flora, and their habitats and ecosystems, and of agricultural biodiversity.

#### ***Strategic***

- Extent of support for the proposed standard (e.g. one or more NPPOs or RPPOs have requested it, or one or more RPPOs have adopted a standard on the same topic).
- Frequency with which the issue addressed by the proposed standard emerges as a source of trade disruption (e.g. disputes or need for repeated bilateral discussions, number of times per year trade is disrupted).
- Relevance and utility to developing countries.
- Coverage (application to a wide range of countries/pests/commodities).
- Complements other standards (e.g. potential for the standard to be used as part of a systems approach for one pest, complement treatments for other pests).
- Foundation standards to address fundamental concepts (e.g. treatment efficacy, inspection methodology).
- Expected standard longevity (e.g. future trade needs, suggested use of easily outdated technology or products).
- Urgent need for the standard.

## Appendix 12 – Consideration of proposals for new DPs from the 2007 call for topics

### Consideration of proposals in 2007 call, as requested by SC:

#### *Anguina* spp., *Conotrachelus nenuphar* and *Phoma exigua* var. *foveata*

Three subjects for diagnostic protocols were proposed in the call for topics of 2007: *Anguina* spp. (nematode), *Conotrachelus nenuphar* (insect), *Phoma exigua* var. *foveata* (fungus). The SC asked the TPDP to review these proposals and make a recommendation. The discipline leads have applied the *Criteria for the prioritisation of DPs* to the three pests and prepared a conclusion. The TPDP is invited to review the three cases and prepare a final recommendation to the SC on whether IPPC diagnostic protocols should be developed for these pests (and, if so, also recommend a working priority).

<b><i>Anguina</i> spp.</b>	
<b>Criteria</b>	<b>Discipline lead review against criteria</b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	No dispute or major difficulty in diagnostic techniques.
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	The protection of the plants is mainly based on seeds cleaning / sieving processes. The diagnosis is mainly undertaken for identification purpose for import/export seeds/products.
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	The plants considered as hosts are mainly wheat, triticale, rye and related grasses. The impact on crops is mainly on seeds. Thus trade implications are the major impact of these nematodes. Furthermore, some <i>Anguina</i> species are vectors of bacteria and bacteria toxins, which can be toxic for grazing livestock (example <i>A. funesta</i> in Australia and death of cattle, sheep).
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	As seeds and especially wheat seeds are concerned, the trade submitted to diagnostic procedures is important in volume and value. Many countries are concerned, even if it becomes rare or extinct. It still found for example for <i>A. tritici</i> in the Near and Middle East, the Asian Subcontinent, China and parts of Africa, USA, Europe.
Other criteria for topics as determined by CPM that are relevant to determining priorities	-
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	<i>Anguina</i> spp. is present in temperate and in semi-arid regions. Nematode damage is negligible in countries adopting modern mechanical and cleaning procedures to separate the nematode galls from visible wheat seeds. The use of high quality seeds has nearly eradicated this nematode from developed countries. However, the nematodes causes severe crop losses to rye (35-65%) and wheat (20-50%) (Anwar et al, 2001; Leukel, 1929, 1957) in 3rd world countries, where poor agricultural practices, monoculture, and the use of poor quality seeds are widespread.
Number of labs undertaking the diagnosis.	No data available, but laboratories involved in import/export analysis might be able to make this analysis. This is all the more true for countries with regulations for <i>Anguina</i> spp. or <i>Anguina tritici</i> (COSAVE, Argentina, Brazil, Chile, Paraguay, Uruguay, Israël, Azerbaijan).
Feasibility of production of a protocol, including availability of knowledge and expertise.	The production of a protocol is feasible (data on morphological and molecular tests available), but no author identified as such at that level.

<b>Discipline lead conclusion</b>	<b><i>Anguina</i> spp. is an important pest especially for wheat seed trade, which is major crop. It is also an important vector for toxins to cattle. But its current distribution is relatively limited and it is not regulated worldwide.</b> According to these reasons <i>Anguina</i> should be ranked as a low priority protocol (3 or 4), but a protocol should be produced.
<b>TPDP recommendation to the SC:</b>	<b>Invite SC to add <i>Anguina</i> spp. subject to the List of topics for IPPC standards with working priority 3.</b>

<b><i>Conotrachelus nenuphar</i></b>	
<b>Criteria</b>	<b>Discipline lead review against each criteria</b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	A very important pest, needing a global DP.
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Very relevant as accurate species id is crucial.
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	Plants concerned: Many high value fruits including pome and stone fruits, of major importance in north America.
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	Large trade, relevant quarantine significance for many countries in other regions (e.g. South America, Asia, Europe, Australia and NZ).
Other criteria for topics as determined by CPM that are relevant to determining priorities	Meets several core criteria.
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	Climatic area: temperate/subtropical. Main pathway: pest pupae in soil or adult in packing material.
Number of labs undertaking the diagnosis.	A few specialists only in north America and certain European countries.
Feasibility of production of a protocol, including availability of knowledge and expertise.	As some relevant expertise and resources already available in certain countries (see above). These could be brought together to produce a protocol usable by a wide range of countries.
<b>Discipline lead conclusion</b>	<b>Strongly recommend adding this species to work programme; suggest adding as work priority - High in 2012. <i>C. nenuphar</i> meets several criteria. It is a very damaging pest for plum, apple, blueberry, etc., and it is important in more than one region.</b>
<b>TPDP recommendation to the SC:</b>	<b>Invite SC to add <i>Conotrachelus nenuphar</i> subject to the List of topics for IPPC standards with working priority 2.</b>

<b><i>Boeremia foveata</i> (syn. <i>Phoma foveata</i>, <i>Phoma exigua</i> var. <i>foveata</i>)</b>	
<b>Criteria</b>	<b>Discipline lead review against criteria</b>
Need for international harmonization of the diagnostic techniques for the pest (e.g. due to difficulties in diagnosis or disputes on methodology)	Detection and identification of <i>B. foveata</i> based on classical methods is time consuming and needs a high level of expertise. Several molecular methods have been developed and published. Recently the molecular phylogeny of <i>B. foveata</i> and allied species has been determined, providing a better understanding of <i>B. foveata</i> in the genus <i>Boeremia</i> .
Relevance of the diagnosis to the protection of plants including measures to limit the impact of the pest.	Disease incidence can be reduced by a reduction in tuber damage during harvest, removal of damaged tubers, no harvesting on wet soils, drying of tubers within 4 h after harvesting, respecting the appropriate period for wound healing (extra oxygen at 10-15 degrees C for at least 10 days), no movement of tubers during storage, and chemical treatment of seed tubers (Stachewicz, H., Kartoffelbau. 1998. 49: 6, 236-240). Early detection of <i>B. foveata</i> in seed potatoes before trade may reduce the spread of the disease.
Importance of the plants protected on the global level (e.g. relevant to many countries or of major importance to a few countries).	According to IMI distribution maps no 727, <i>B. foveata</i> is present in most of the European countries, Australia, Egypt; or present with few occurrence (South Africa). In many countries <i>B. foveata</i> is present with no details, such as Andes region, south Australia, India, Tasmania; or unconfirmed in Canada, USA, Morocco, Russia (present in Western Siberia (Malyuga et al, Mikologiya i Fitopatologiya. 2003. 37: 2, 73-84).
Volume/importance of trade of the commodity that is subjected to the diagnostic procedures (e.g. relevant to many countries or of major importance to a few countries).	A limited number of countries have a large export of seed potatoes worldwide. These trade of commodity that is subjected to the diagnostic procedures is of great importance for these countries.
Other criteria for topics as determined by CPM that are relevant to determining priorities	The number of publications/reports dealing with <i>B. foveata</i> is relatively low during the last decade.
Balance between pests of importance in different climatic zones (temperate, tropics etc) and commodity classes.	Most records are from Europe, temperate zone. Compared with bacterial diseases, <i>B. foveata</i> is of less importance. The present situation in other climate zones is less clear.
Number of labs undertaking the diagnosis.	In Europe, <i>B. foveata</i> was a Quarantine organism and labs of many countries tested seed potatoes on a routine base in the period 1960-1990. However, as far as known, commodities are not tested on a routine base at present in Europe. In other parts of the world where the disease is restricted or rare, routine testing of imported commodities is probably more common.
Feasibility of production of a protocol, including availability of knowledge and expertise.	See above, classical and molecular data are available for developing a protocol. Additional studies using recently phylogenetic data are recommended to obtain more advanced validation data of the molecular methods.
<b>Discipline lead conclusion</b>	<i>B. exigua</i> may not have a high priority, it can be managed well with good practice during harvest and storage. However, this is based on the experiences and technical possibilities in Europe. Bacterial diseases as brown rot and ring rot are more destructive.
<b>TPDP recommendation to the SC</b>	<b><i>Invite SC to note the subject <i>Boeremia foveata</i> (syn. <i>Phoma foveata</i>, <i>Phoma exigua</i> var. <i>foveata</i>) will be discussed again at the TPDP next meeting.</i></b>