



Focus on a laboratory

The European and Mediterranean Plant Protection Organization, one of our objectives: serving the needs of plant pest diagnostic laboratories

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EPPO is an intergovernmental organization responsible for European cooperation in plant health. The objectives of the organization are to protect plant health in agriculture, forestry and the uncultivated environment, to develop international strategies against the introduction and spread of dangerous pests, to encourage harmonization of phytosanitary regulations and all other areas of official plant protection action and to promote safe and effective control methods. The different activities conducted in this framework are presented.

Introduction

EPPO is an intergovernmental organization responsible for European cooperation in plant health. Under the International Plant Protection Convention (IPPC) EPPO is the regional plant protection organization (RPPO) for Europe and the Mediterranean region. Founded in 1951 by 15 European countries, EPPO now has 50 members (see Figure 1) covering almost all countries of the European and Mediterranean region. National Plant Protection Organizations are the EPPO contact points. The objectives of EPPO are to protect plant health in agriculture, forestry and the uncultivated environment, to develop international strategies against the introduction and spread of dangerous pests, to encourage harmonization of phytosanitary regulations and all other areas of official plant protection action and to promote safe and effective control methods. As a Regional Plant Protection Organization, EPPO also participates in global discussions on plant health organised by FAO and the IPPC Secretariat. More information on the Organization is presented in Box 1.

One of the main aims of EPPO is to help its members to prevent entry or spread of dangerous pests. The Organization has therefore been given the task of:

- identifying pests which may present a risk for the region (early warning),

- evaluating their risk for the region and making proposals on the phytosanitary measures which can be taken against them (Pest Risk Analysis).

Once a pest has been evaluated and countries have agreed that it should be added to the EPPO Lists of pests recommended for regulation, recommendations on how to detect and identify the pest may be developed (diagnostic protocols and phytosanitary procedures for inspection) as well as recommendations on how to eradicate and control this pest. In addition to pest specific activities, EPPO has also developed recommendations for quality assurance in laboratories, in order to promote harmonization of procedures in the EPPO region. To perform these activities, much information on pests presenting a phytosanitary risk to the EPPO region is required and is collected by the Organization and made available to its members. Different databases have been developed including PQR (Plant Quarantine data Retrieval system) and the EPPO database on Diagnostic expertise. The different activities conducted in this framework and that are of interest for plant pest diagnostic laboratories are presented.

EPPO activities serving the needs of plant pest diagnostic laboratories

Early warning

The EPPO Secretariat has established early warning systems to identify emerging risks:

- The Alert List draws the attention of EPPO member countries to certain pests potentially presenting a risk to them. The Alert list is updated regularly: http://www.epo.int/QUARANTINE/Alert_List/alert_list.htm.
- A free monthly newsletter (EPPO Reporting Service) is published containing information gathered from National plant protection organizations, literature and internet surveys: http://www.epo.int/PUBLICATIONS/reporting/reporting_service.htm
- The List of invasive alien plants to be managed as a priority in EPPO member countries. This list is established on the basis of a prioritization process: http://www.epo.int/INVASIVE_PLANTS/ias_lists.htm#IAPList

With such lists, laboratories can be alerted on potential new pest for which they may have to develop and/or validate diagnostic tests.

Evaluation of potential risks: Pest Risk Analysis

Measures adopted by countries to protect their territories from the introduction of new pests should be technically justified.

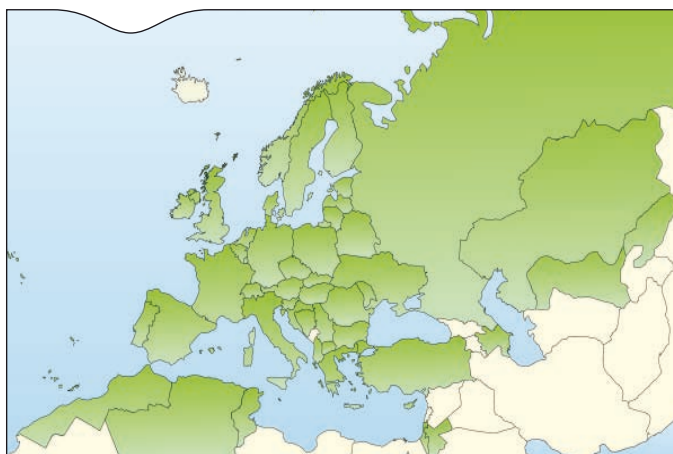


Figure 1. Map of EPPO member countries



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The organization of EPPO

EPPO is administered by an Executive Committee (seven countries elected on a rotational basis, meeting twice a year), under the control of its Council (representatives of all member countries, meeting once a year usually the Heads of the NPPOs) headed by a Chairman and a Vice-Chairman, elected as individuals.

The Secretariat (permanent staff of EPPO working at the headquarters in Paris) is composed of 13 persons (including 8 scientific staff members). EPPO is financed directly by annual contributions from its member governments. Its official languages are English, French and for certain purposes Russian.

The technical activities of EPPO in the field of phytosanitary measures (also often called "plant quarantine") are directed by the Working Party on Phytosanitary Regulations. This Working Party meets once a year (in June). Meetings are held in member countries throughout the EPPO region. The Working Party draw up its programmes subject to the approval of the Executive Committee and Council and assigns specific tasks to Panels of experts or Expert Working Groups (for one off activities). Panels are composed of specialists from member countries, nominated as individuals by their respective NPPOs, and they prepare detailed draft standards which will be recommended to all member countries (see details of the procedure below). Every year, 20-25 Panel meetings are held in Paris or in scientific centres throughout the region. Panels generally meet once a year, but this can be adapted according to the priorities and work programme of the Organization. The technical work of the Organization depends on the active and continued participation of experts from member countries in the Working Party and Panel meetings.

EPPO's recommendations to its member countries

As a result of the work undertaken by the different technical bodies of the Organization, EPPO makes recommendations to the NPPOs of its member countries (including the recommendation regarding pests that should be regulated). These recommendations are Regional Standards in the sense of the revised IPPC. In order to ensure international acceptance, draft standards go through a complex approval procedure, during which all member countries have the opportunity to express their views. Final decisions are obtained by consensus and EPPO Standards are officially adopted by the EPPO Council. EPPO Standards have been developed within the two main fields of EPPO activity (plant protection products and phytosanitary measures).

All Standards are published in the EPPO Bulletin and are also available on the EPPO website.
<http://archives.eppo.int/index.htm>

For more information visit the EPPO Website
<http://www.eppo.int/>

A system has been established to perform Pest Risk Analysis (PRA) at the EPPO level and Expert Working Groups are convened to conduct PRAs on specific pests. Five PRAs are conducted every year including the identification of possible measures to prevent the introduction of these pests. Experts from laboratories of the EPPO region often collaborate to these evaluations and EPPO is willing to strengthen this participation.

Recommendations on the pests which should be regulated as quarantine pests

Pests which have been evaluated through the EPPO system and have been recommended for regulation as quarantine pests for the EPPO region are included in the EPPO A1 and A2 Lists. EPPO maintains appropriate documentation on the pests included on these lists. From these lists, priorities for the preparation of diagnostic protocols are made.

Recommendations on how to detect and identify pests: diagnostic protocols

The programme to prepare diagnostic protocols for regulated pests of the EPPO region was initiated in 1998. The work is conducted by the different specialized diagnostic Panels and the work programme is overseen by a horizontal Panel (the EPPO Panel on Diagnostics and Quality Assurance). The list of existing EPPO Panels is available at http://www.eppo.int/ABOUT_EPPO/panels.htm. The diagnostic protocols are written by assigned authors according to a common format and are then reviewed by the relevant diagnostic Panels. They are approved following the regular EPPO Standards approval procedure. The first EPPO Standards for diagnosis were published in 2001. More than 100 pest specific Diagnostic Standards have been approved in all pest groups and more than 10 are currently in preparation. The Diagnostic protocols are freely available online: <http://archives.eppo.int/EPPOStandards/diagnostics.htm>

In order to ensure the quality of diagnosis performed in the laboratories, standards on quality assurance have also been developed and two Standards on quality assurance for plant pest diagnostic laboratories have been adopted :

- PM 7/84 Basic requirements for quality management in plant pest diagnostic laboratories,
- PM 7/98 Specific requirements for laboratories preparing accreditation for a plant pest diagnostic activity.

The Standard PM 7/98 is currently under revision to take into account the recent experience of laboratories with validation of tests.

To perform these activities, much information on pests presenting a risk to the EPPO region is required and is collected by the Organization and made available to its members. Different databases have been developed including PQR (Plant Quarantine data Retrieval system) and the EPPO database on Diagnostic expertise. A system to be used by National Plant Protection Organization to communicate pest reports is also under development.

Plant Quarantine data Retrieval system (PQR)

PQR is the EPPO database on quarantine pests. The development of PQR was initiated by the EPPO Secretariat in 1984. The first database appeared in 1990 but was an internal tool for the EPPO Secretariat. It was suggested that it could also be a useful tool for EPPO member countries, and in 1991 the first version of PQR was released to the NPPOs. From 1991

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to 2007, several PQR versions were distributed on disks or CD-Roms to the NPPOs. In April 2007, the Executive Committee agreed that the database should be made freely available on the EPPO website (as a downloadable computer system). The EPPO new version of PQR (5.0) was launched in 2011 with a largely modified interface to allow more rapid access to the data and 'real-time' update of the contents.

The database is developed and maintained by the EPPO Secretariat. It gives access to data on:

- all the pests of the EPPO A1 and A2 lists and of EU Directive 2000/29 ;
- pests of the EPPO Alert List ;
- plants of the EPPO List of invasive alien plants ;
- many other quarantine pests and invasive plants of interest to other regions of the world (data obtained from FAO, CABI or from other RPPOs, but with less detailed information than for the EPPO and EU pests).

For each pest, it is possible to lists of host plants, commodities able to act as pathways in international trade, and details on geographical distribution (including maps). Conversely, it is also possible to obtain specific lists of pests, by stipulating the host species, the commodity, and the country of interest. PQR contains general nomenclatural and taxonomic details on pests and hosts.

At present, PQR contains documented information for more than 1,400 pests. However, as already stated, data is more complete for EPPO/EU listed pests than for other types of pests.

PQR can be freely downloaded at <http://www.eppo.int/DATABASES/pqr/pqr.htm>

An online database (web-based interface) is currently under development.

EPPO computerized system for pest reports

In September 2011, the EPPO Council adopted a new Standard PM 1/5(1) Format for pest reports. Since the adoption of this format, several EPPO member countries have started to use it to report their pest outbreaks. The EPPO Secretariat is currently developing a computerized form based on this Standard. In 2012/2013, all EPPO member countries will be invited to use it and provide feed-back. It is also envisaged to initiate technical discussions with the International Plant Protection Convention Secretariat to develop a common XML format. Such a format will enable countries to send their pest reports to the International Phytosanitary Portal via EPPO, if they wish to use this possibility.

EPPO database on diagnostic expertise

In 2004, the EPPO Council stressed that the implementation of phytosanitary regulations for quarantine pests was being jeopardized by decreasing expertise in plant protection and declared a state of emergency for Plant Health often referred to as the "Madeira declaration" (EPPO, 2004). Following this declaration, several regional initiatives were taken.

At the EU level a proposal was made in 2005 for a Phytosanitary ERA-Net to coordinate national and regional phytosanitary research programmes which resulted in the establishment of the EUPHRESKO project ('European Phytosanitary Research Coordination' <http://www.euphresco.org>, (Inman, 2006)). Another regional initiative was suggested by the EPPO Panel on Diagnostics in 2005. This Panel decided to identify practical actions to improve collaboration on diagnostics in Europe and

to provide good scientific support for the diagnostic work of NPPOs. It recommended that the EPPO Secretariat should compile an inventory of the available expertise on diagnostics in the region and of training capacities in diagnostics. The EPPO database on diagnostic expertise came into life. This database provides an inventory expertise available in the EPPO region. Its aim is to cover the expertise on regulated pests (i.e. pests of EPPO A1 and A2 Lists, pests mentioned in EPPO Standards PM4: Production of Healthy Plants for Planting), pests possibly presenting a risk to EPPO member countries (EPPO Alert List) and plants of the EPPO List of invasive alien plants. This database does not include common pests which are widely distributed in the EPPO region. The EPPO Secretariat is maintaining the database but note that all information included in the database is based on individual expert's own declarations of their expertise.

In December 2012, a new section "validation data for diagnostic tests" was added at the request of laboratories which are engaging in an accreditation process. As laboratories preparing for accreditation should only use validated tests it was considered that sharing validation data at EPPO level will save resources and promote collaboration. The data included in the database have been generated by various laboratories in EPPO member countries. The validation data are presented according to a common format developed by the EPPO Panel on Diagnostics and Quality Assurance. Validation data can be submitted by any laboratory registered in the EPPO database on diagnostic expertise.

The database can be visited at <http://dc.eppo.int/>

Finally, since 1985 EPPO has a regular programme of Conferences and Workshops on diagnostics reports of these different events are available at http://archives.eppo.int/MEETINGS/EPPO_workshops.htm. These meetings are unique occasions for experts to meet to exchange information on the diagnostic of regulated pests.

Conclusion

One of the consequences of the increase in international trade in recent years is that European countries have been faced with the introduction of several new pests (e.g. *Bursaphelenchus xylophilus*; *Drosophila suzukii*; *Tuta absoluta*; *Pseudomonas syringae* pv. *Actinidiae*...). By providing prompt information and alert to National Plant Protection Organizations and by encouraging harmonization of plant pest diagnostics, EPPO hopes to contribute to the prevention of introduction of new pests from other parts of the world which could damage crops or the environment, and to the limitation of their spread within the region should they be introduced.

References

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