

Roundtable discussions

Round table 1: Diagnostics for an increasing number of pests: what are the consequences for laboratories and how can this be managed to enhance the resilience of laboratories?

Moderators: Helga Reisenzein (AGES, AT) and Emilio Stephani (Unimore, IT)

About 450 pests are recommended for regulation by EPPO. In addition to the quarantine pests regulated in their country, laboratories have to perform diagnostic activities for export for pests they may have little knowledge about. This round table started with a general discussion on the challenges laboratories that have to diagnose many plant pests encounter. The participants highlighted that the need for reference material (including reliable sequences) and that expertise is challenging particularly for small laboratories and/or laboratories that have to deal with a large number of different pests in the sample received. It was noted that for unfamiliar pests, it is not always possible to follow all the quality requirements associated with diagnostics (e.g. validation of tests).

In small groups, the participants then discussed the strategies that can help laboratories address these challenges. Participants highlighted the possibility of using generic techniques, information available in the literature and/or relevant network of experts to diagnose new pest and that it is important to perform whatever tests are needed and communicate the uncertainty to the customer. Sharing expertise can allow a more efficient use of resources. This can be done through databases, research projects, and events (workshops, training events, and conferences). It was noted that in person meetings are essential to strengthen networks and that more funding would also be needed. Training the younger generations and communication with other disciplines / stakeholders (e.g. universities, research centres) should be encouraged more. The need to share information on laboratories producing and willing to share reference material (including sequence data) and collaboration was considered important.

Round table 2: Emerging techniques for the detection of plant pests: Convenience, reliability and equivalence

Moderators: Pedro Pablo Parra (ANSES, FR) and Lee Robertson (INIA, ES)

Plant Health diagnostics uses a plethora of methods to detect and identify pests. In this round table, experts explored in small group discussions and through a survey the strengths and limitations of current diagnostic approaches. There was strong consensus among participants that classical diagnostic methods, such as morphological analysis and isolation, remain essential and should be maintained in routine diagnostics. It was noted that those methods require a lot of expertise which is lacking in some laboratories as experienced diagnosticians retire. Participants considered that sequencing and real-time PCR are the most trusted methods used. New molecular methods such as loop-mediated isothermal amplification (LAMP), recombinase polymerase amplification (RPA) and droplet digital PCR were considered promising by participants but expertise is still lacking. Sequencing technologies have become the primary approach for unknown samples, yet bioinformatics expertise remains the most significant capacity gap. Advanced methods e.g. biosensors, mass spectrometry, and AI-powered imaging hold potential but are not yet well established for diagnostics.

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Approximately 70% of participants at the round table identified themselves as early adopters of new diagnostic methods, demonstrating proactive innovation attitudes. However, implementation barriers persist such as cost, limited availability of reference material, and insufficient training. High-throughput sequencing (HTS) emerged as the most desired method in the future. Inspectors emphasized the need for tests that can distinguish whether an issue in a consignment is physiological or caused by a pathogen.

Round table 3: We need YOU to preserve expertise in classical diagnostic techniques

Moderators: Bart van de Vossenbergh (NIVIP-NVWA, NL) and Maria Inácio (INIAV, PT)

This roundtable addressed the need to preserve expertise in classical diagnostic techniques (e.g. morphology, microscopy, culture-based methods, serological approaches, and bioassays) within the plant health community. The discussion was framed by the recognition that experienced diagnosticians and taxonomists are approaching retirement, creating a risk of losing valuable practical knowledge and diagnostic capacity. The session focused on identifying practical needs and opportunities for action within the daily work of participants.

The exercise clearly demonstrated that a lot of expertise already exists within the EPPO network. Participants thought that expertise should not be understood solely as advanced technical diagnostic skill and recognized that preserving diagnostic capacity also depends on contributions such as organizational skills, coordination, network-building and the development of tools that help connect people and knowledge.

Offers identified by participants included the exchange of reference materials, provision of training opportunities, informal knowledge sharing across laboratories and peer support. The central challenge identified was therefore not necessarily a lack of expertise, but rather improving the visibility of existing expertise within the region. Participants agreed that communication is key to bridge the gap between the needs and available expertise. Informal interaction between colleagues (e.g. in conferences) was viewed as critical. Participants also mentioned that advertising better the existing professional networks and supporting scientists' connections could help people to bridge the needs and available expertise. The existing EPPO Database on diagnostic expertise was recognized as an important information hub for identifying individuals with relevant expertise. However, several suggestions were made to improve its usability (e.g. by developing an interactive map-based interface, allowing additional filtering, providing information on training and reference material available in laboratories, allowing people to create and update their own EPPO expert profile to indicate their needs and what they can offer and exploring links to other networking platforms such as LinkedIn).

Securing funding for networking activities and interlaboratory exchanges is also important, as this would create more opportunities to bring experts together and to facilitate connections between needs and available expertise.