23-28495

Outputs from interactive sessions

This document summaries the main suggestions from two interactive sessions organised in during the Workshop for inspectors on risk-based sampling and inspection (26th to the 28th of April 2023, Bern (CH) at the Swiss Federal Office for Agriculture).

The suggestions made during these sessions will be presented and discussed at the Panel on Phytosanitary Inspections and at the Working Party on Phytosanitary Regulations where they will be considered for possible activities to be included in the EPPO Work Programme.

(1) Critical points for risk-based surveys

Participants discussed aspects of their working environment that will promote or limit their ability to deliver on a fictious scenario:

It's Friday lunch time and a grower has reported the following to the inspection service:

Following the harvest of apples, our workers have noticed some worrying symptoms, I have some samples here. However, the workers did not keep the fruits apart nor did they mark which trees from which the fruit and leaves with symptoms were collected. The orchard is 100 hectares. We are very concerned and want some immediate action.

The main suggestions made during this session are detailed below.

During the discussion, participants focused on the needs of inspectors. They highlighted that access to images was very important and noted that more images that follow the disease cycle would be very useful. Additionally, more images with detailed descriptions would be useful and participants highlighted the need for 'look-alike images' (images of similar pests) and images sharing best practice. Images that show the similarities or differences between diseases and damage caused by drought or other abiotic conditions would also be very useful.

Participants also highlighted the need for an inspectors' network for the exchange of information. They noted that a network to exchange experiences, for example following an outbreak on what went well and what did not work well (lessons learnt) would be a very valuable resource. This could really help when planning for rapid response scenarios and other aspects could be considered such as facilitating exchange programmes.

(2) Discussion session: Technologies for Risk-Based Sampling (RBS)

Within this interactive session, participants focused discussions around six themes (see below). The participants commented on how the technology can support field inspections, how the use of the technology can increase the sensitivity of detection and what restrictions there will be when applying each of the technologies.

(a) DNA/LFD based identification methods

Participants commented that DNA/LFD based identification methods can provide quick identification of known species (i.e. fall army worm). Pre-screening tools very targeted. They noted that these rapid onsite tools allow an inspector to make decisions confidently and independently from the laboratory, and this can be in particular useful outside normal laboratory hours. These methods could be improved by expanding the number of pests that can be identified. Participants highlighted restrictions of the method which can include costs, including the cost of training staff, the sensitivity to contamination and how this affects the results. Participants also mentioned mobility of equipment and the use of it in the field as a potential restriction.

(b) Remote imaging techniques

Participants noted that there was experience using remote imaging techniques with *Xylella fastidiosa* and Citrus tristeza virus (CTV). Using this technique as part of a risk-based survey can help to rapidly identify areas where crops/other plants show signs of infection. It can speed up the detection of pests by targeting the plants to be tested more effectively and help monitor the outbreak. The technique is driven by technology but also limited by technology. Participants noted that it can be costly (risk of loss or damage) and that expertise is required to analyse the results. The participants noted that it is important to share experiences for this technology and it is not applicable for all pests, applicable in homogeneous landscapes. There is a need for regular updates.

(c) Volatile detection techniques

Participants noted that volatile detection techniques are interesting and can be used in combination with other methods. Participants wondered if in general, currently, there is limited potential for this method. They noted concerns about reliability in some situations. Additionally, there are needs for detection at an earlier stage – before symptoms. Participants noted the restrictions for sniffer dogs include the cost, the time involved in training (dog and the inspector), and the fact that dogs can normally only be trained to find specific pests. There is a need for validation of the methods. For E-nose techniques, there is a lack of a reference database to compare. Weather and environment variables can also interfere with the results and the participants concluded that more research is required.

(d) Smart surveillance technologies

The participants noted that the use of smart surveillance technologies can act to reduce the time and can increase the efficacy of monitoring. Can increase ability to detect pests and can decrease the time farmers have to wait for notification. These technologies can reduce the time to the application of treatments and expand the search area and give more focus on crops/regions that are at risk. To improve detection using this method, participants thought that more training on the use of the technology and training on the identification of pests was needed. Furthermore, more information on trap effectiveness and a quicker response time would be useful. Restrictions on the use of this technology include budget constraints– development of smart technology systems, apps, equipment are all expensive. They may require a major initial investment. Skills needed in house are not always available and therefore expertise must be sought from elsewhere. There is a need for selective pheromones and there also can be issues with insects escaping from traps. Validating techniques, technology transfer and adoption of technology can be difficult. Participants noted that there is a need for companies to develop new systems and incentives are needed to encourage companies to work on this.

(e) Statistical Risk-Based Sampling (RBS) tools

Participants noted that advantages included the fact that there are already tools that can be utilised, and new tools do not need to be developed. Such tools will enable users to move away from percentage-based sampling and this can help with multiple surveys and improve consistency. Such tools can increase sensitivity of detection of pests by linking sample number to which sample to take. These tools allow better visualization of what to do. Survey designers can talk with inspectors as part of the survey design. Training for inspectors to obtain a better understanding of statistics is needed. This should show the merits of doing sampling differently, and taking the time to try new sampling methods. Some restrictions were identified such as finding ways to motivate change. Other restricting factors are legislation, lack of understanding of the tool, restrictions on the use of one tool- one tool normally does not do everything. Resources and cultural changes are needed. Connectivity of technology in the field is needed to obtain the data to populate the tool. There is a perception by inspectors that statistics cannot be trusted and they would like to be shown practical examples that it works. The participants thought it may be useful to put place follow-up checks to reduce inspectors' concerns.

(f) 'Dream' technologies

Here participants could use their imagination and explore dream technologies. Holograms were mentioned that could guide inspectors through inspection of different consignments or areas. Tools that could efficiently search and obtain information on pests, information on outbreaks or information on global import restrictions were mentioned. Traps that automatically analyse catch data (DNA) and send it in real time to the computer/smart phone and an AI tool that guides inspectors through processes (what is the pest, what tests to do, who has the expertise, GPS maps) were also mentioned. Tools that could examine roots and soil (e.g. scanners) could reduce workload and participants also highlighted the need for better tools for assessing treatment (e.g. fumigation) efficiency.