IPRRG 2023

Collaboration and capacity building in pest risk analysis

2023 Annual Meeting of the International Pest Risk Research Group
21st – 24th September 2023, Nairobi, Kenya

PROGRAMME BOOKLET

in Association with the Kenya Plant Health Inspectorate Service, CABI and Cervantes Agritech

Dear Attendee,

We extend a warm welcome to the 2023 annual meeting of the International Pest Risk Research Group, set against the captivating backdrop of Nairobi, Kenya. This vibrant and culturally rich city, renowned for its hospitality, offers an ideal setting for our gathering.

The theme we have chosen for this year's meeting, "Collaboration and Capacity Building in Pest Risk Analysis," resonates deeply with the pressing needs of our time. Nairobi, known for its spirit of unity and cooperation, serves as an ideal host, emphasizing the importance of collective action in addressing the complex challenges of pest risk analysis.

Kenya, with its diverse landscapes and ecosystems, provides a unique context for our deliberations. Climate change continues to influence the movement of agricultural and forestry products, impacting global trade and local livelihoods. As we gather here, we recognize that Kenya, like many regions, is grappling with the consequences of climate change on pest risk. This underscores the urgency of our shared mission.

Our aim is to explore how collaboration and capacity building can fortify our collective response to these challenges. Strengthening our capacity to manage pest risks is pivotal in safeguarding agricultural and ecological systems. By fostering collaboration among researchers, private sector, and policymakers, we can collectively build the foundations for a more resilient and sustainable future, not only in Kenya but around the world.

This year, we focus on the following key topics:

- Collaborative approaches in pest risk modelling and mapping
- Capacity building initiatives and training programs
- Advances in data collection and integration for more accurate risk assessments
- Socio-economic factors and their impact on pest risk management
- Innovative methodologies for pest risk analysis and prediction
- Case studies highlighting successful collaborations and capacity building efforts
- Policy implications and regulatory frameworks for pest risk management
- Emerging pests and their potential impacts on global agriculture
- Climate change and its influence on pest dynamics and spread
- Novel technologies and tools for pest surveillance and early detection
- Risk communication and stakeholder engagement in pest management
- Ecological impacts of invasive pests and their management strategies
- Genetic approaches in pest control and resistance management
- Economic evaluation of pest control interventions and their cost-effectiveness
- Remote sensing and geospatial analysis in pest risk assessment
- Biosecurity measures and quarantine protocols for preventing pest introductions.
- Cross-disciplinary collaborations in pest risk research and modelling

By delving into these themes, we aim to chart a course toward enhanced collaboration and capacity building in pest risk analysis. Together, we will explore innovative strategies and share best practices to effectively address the evolving landscape of pest risk management.

As you participate in this event, we encourage you to engage in meaningful discussions, forge valuable partnerships, and contribute your insights to our shared mission. Nairobi, with its warm hospitality and vibrant culture, provides the ideal backdrop for fostering collaboration and building capacity in our field.

IPRRG 2023 is co-located with the 4th International Phytosanitary Conference, thoughtfully hosted by KEPHIS, scheduled from September 18th to 21st, 2023. We are certain that the theme of the International Phytosanitary Conference, "Enhancing Phytosanitary Systems for Trade Facilitation, Climate Smart Agriculture, and Sustainable Livelihoods," harmoniously aligns with the overarching theme of IPRRG 2023. This convergence of two influential events promises an immersive and enlightening experience for all individuals intrigued by pest risk methodologies and associated research.

This meeting would not have been possible without the efforts of Kenya Plant Health Inspectorate Service, CABI and Cervantes Agritech. We thank them all.

We extend our heartfelt welcome to you and look forward to a productive and inspiring meeting ahead. Thank you for joining us in Nairobi for this significant endeavour.

Sincerely,

INTERNATIONAL PEST RISK RESEARCH GROUP EXECUTIVE COMMITTEE

CHAIR: Frank Koch (Research Triangle Park, North Carolina, USA)

VICE-CHAIR: Rose Souza Richards (Nyon, Switzerland)

SECRETARY-TREASURER: Melanie Newfield (Wellington, New Zealand)

COMMUNICATIONS OFFICER : Tomasz Kaluski (Parma, Italy)

STUDENT REPRESENTATIVE: Jessica Kriticos (Canberra, Australia)

POLICY LIAISON OFFICER: Alan MacLeod (York, UK)

IMMEDIATE PAST CHAIR & **LOCAL ARRANGEMENTS ORGANISER:** Darren Kriticos (Canberra, Australia)

DAY 1 – WEDNESDAY, SEPTEMBER 20, 2023

Location: *KCB Leadership Centre*

18:00 – 20:30 *Participant Registration*

DAY 2 – THURSDAY, SEPTEMBER 21, 2023

Location: *Kenya Plant Health Inspectorate Service Headquarters*

7:00 Technical excursion with lunch (all times are approximate)

7:00 Bus to technical excursion

10:00 – 12:00 Technical excursion

12:30 – 13:30 LUNCH

13:30 – 17:00 Technical excursion

17:00 – 17:40 Return to the hotel

18:30 GROUP DINNER

DAY 2 – FRIDAY, SEPTEMBER 22, 2023

Location: *Kenya Plant Health Inspectorate Service Headquarters*

8:00 Welcome to the day and local announcements

8:30 Welcome to IPRRG 2023 – *Frank Koch*

8:40 Opening remarks - KEPHIS

9:00 IPRRG: When it all began – a history on the foundation of IPRRG – *Darren Kriticos*

9:30 CABI – Lucinda Charles, MaryLucy Oronje

10:00 Awards for Excellence in IPRRG: Nomination Guidelines - *Frank Koch*

10:15 IPRRG's Relationship with IPPC - *Alan MacLeod*

10:30 -11:00AM BREAK

11:00 Brief introductions from meeting participants (In 30 seconds or less, who are you, where are you from, for whom do you work, and why are you interested in this meeting?)

11:20 Pitches for next meeting

11:50 Group photo!

12:00 - 13:00 LUNCH

Technical Session 1: Pest Risk Modelling and Climate Impact

Moderator: Darren Kriticos

1.1 Using Earth Observation Data to Improve Climate-Modifying Habitat Datasets for Pest Risk Modelling - Presenter: Tim Beale (20 min + 10min Q&A)

1.2 Analytical Parallels Between Quantitative Risk Modelling and Regional Forest Disturbance Monitoring - Presenter: Frank Koch (20 min + 10min Q&A)

1.3 The IPRRG Climate Change Project - Presenter: Darren Kriticos (20 min + 10min Q&A)

14:30 – 15:00 BREAK & POSTER SESSION

Technical Session 2: Pest Surveillance and Analyses

Moderator: Tomasz Kaluski

2.1 The potential global distribution of Corythucha ciliata under current and future climate scenarios - *Presenter: Jessica Kriticos (20 min + 10 min Q&A) *STUDENT PRESENTATION**

2.2 Phytosanitary Sampling Methodologies for At-Border Interventions: A Comparative Review Across Jurisdictions - Presenter: Nicolas Moran (20 min + 10min Q&A)

2.3 Pest survey toolkit and statistical tool RiPEST - Presenter: Tomasz Kaluski (20 min + 10min Q&A)

2.4 Horizon scanning Dashboard - Presenter: Sybren Vos (20 min + 10min Q&A)

17:00 ADJOURN

DAY 3 – SATURDAY, SEPTEMBER 23, 2023

Location: Kenya Plant Health Inspectorate Service Conference Centre (KECC)

8:30 Welcome to the day

Technical Session 3: Pest Risk Analysis and Decision Making

Moderator: Melanie Newfield

3.1 Development of the CABI Pest Risk Analysis Tool: Current Status and Future Plans to Support PRA Capacity Building - Presenter: Lucinda Charles (20 min + 10min Q&A)

3.2 What Makes a Good Risk-Based Decision in Biosecurity? - Presenter: Melanie Newfield (20 min + 10min Q&A)

3.3 A Guide to Optimizing Investment into Pest Risk Controls at the Border – A Methodological Perspective - Presenter: Anca Hanea (20 min + 10min Q&A)

3.4 Exploring the impact of escalating demand for sub-tropical fruit crops on emerging pests in Europe - Presenter: Eduardo de la Peña (20 min + 10min Q&A)

10:30 -11:00 BREAK

Technical Session 4: Social and Stakeholder Engagement and Health and safety Concerns in Pest Management

Moderator: Alan MacLeod

4.1 A Look at Stakeholder Engagement in the UK with a Focus on the Emerging Vineyard Industry - Presenter: Dani Lindley-Klassen (20 min + 10min Q&A)

4.2 Collaboration with Social Scientists for a Better Understanding of Social Impacts within PRA - Presenter: Alan MacLeod (20 min + 10min Q&A)

4.3 Agrochemical Handling Health Complaints and Cocoa Farmers' Safety Compliance in the Ashanti Region of Ghana - Presenter: Abayomi Oyekale (20 min + 10min Q&A)

12:30 - 13:30 LUNCH

13:30 *Emerging pests and their potential impacts on global agriculture workshop*

Facilitator: Melanie Newfield

15:30 - 16:00 BREAK

16:00 Conclusion of the Workshop

17:00 ADJOURN

18:00 DINNER

DAY 4 - SUNDAY, SEPTEMBER 24, 2023

Location: Kenya Plant Health Inspectorate Service Conference Centre (KECC)

9:00 Welcome to the day

Cross-disciplinary collaborations in pest risk research and modelling workshop

Facilitators: Frank Koch and Alan MacLeod

10:30 -11:00 BREAK

11:00 Voting for the best IPRRG 2023 presentations

11:15 Presentation of IPRRG 2023 awards for presentations winners

11:30 IPRRG Business Meeting - everyone is welcome to participate in this significant meeting, offering members a chance to gain insights into the workings of IPRRG, share specific requirements with IPRRG leadership, and contribute to shaping the organization's future direction.

1. Membership status (Chair / Secretary-Treasurer)

2. Incorporation as an association and new constitution (Chair)

3. IPRRG finances (Secretary-Treasurer)

4. Communications issues (Chair / Communications Officer)

5. Student issues (Student Representative)

6. When and where will our upcoming annual meeting take place?

(Chair) - Welcoming nominations and proposals for IPRRG's future events in 2024 and beyond (open to all IPRRG members).

7. Any other business (AOB)

13:00 ADJOURN AND LUNCH

14:10 IPRRG GROUP ACTIVITIES (SELF-ORGANIZED)

ORAL PRESENTATION ABSTRACTS

(ARRANGED IN ORDER OF PRESENTATION)

1.1 Using earth observation data to improve climate-modifying habitat datasets for pest risk modelling.

Authors: Tim Beale[1], Pascale Bodevin[1], Steve Edgington[2], Libertad Sanchez Presa[1], Bryony Taylor[1], Alex Cornelius[3], Gerardo Lopez Saldana[3], and Darren J. Kriticos[4].

[1]CABI, Wallingford, UK; [2]CABI, Egham, UK; [3]Assimila, Reading, UK; [4]Cervantes Agritech, Canberra, Australia

Presenting author: t.beale@cabi.org

Non-climatic habitat factors can have a significant effect on species ranges, allowing them to persist well beyond their natural ranges. Irrigation and protected agricultural structures such as glasshouses are used specifically to allow crop species to be grown successfully in locations where the climate is otherwise inhospitable. The same conditions that allow the crops to be grown in hostile climates allows pest species to persist beyond their natural limits. Species distribution databases such as GBIF and iSCAN do not distinguish between species distribution records collected from natural habitat situations and those from artificial habitat. Bioclimatic models that ignore the role of these artificial habitat modifications routinely make egregious errors, incorrectly projecting habitat suitability into inclement climates. Methodically overestimating the pest risk area in this manner can have important effects on biosecurity risk management, misdirecting resource allocation for preparedness activities, and undermining the reputation of pest risk assessment.

Advances in Earth Observation (EO) technology have opened up new possibilities for addressing agricultural challenges in the face of climate change. The EO4AgroClimate project is using EO-derived data to enhance three critical modelling datasets: irrigation, protected agriculture, and canopy temperature. These datasets will help to contextualise species distribution data from repositories, as well as improve the performance of environmental niche models (ENM) leading to more accurate, high-resolution, and timely information for pest risk assessment."

1.2 Analytical parallels between quantitative risk modelling and regional forest disturbance monitoring

Authors: Frank Koch[1]

[1]USDA Forest Service, Southern Research Station, Research Triangle Park, North Carolina USA

Presenting author: frank.h.koch@usda.gov

Much of my recent work has been targeted toward harmonization of forest disturbance reporting and assessment at a regional or continental scale. Because of increasing data availability and the need to consider spatial patterns of disturbance through time – as well as the wide variety of biotic and abiotic causal agents – new methods and technologies such

as cloud-based computing and artificial intelligence algorithms have become necessities for forest disturbance monitoring. These methods and technologies have also started to emerge in the pest risk analysis arena. My presentation will focus on some of the shared considerations (e.g., integrating climate change, dealing with prediction uncertainty, combining disparate data) as both disciplines strive to move forward. I will also discuss opportunities for synergy given the similar objectives of plant protection organizations versus those tasked with monitoring long-term forest sustainability.

1.3 The IPRRG climate change project and efforts to engage with Africa

Authors: Darren J Kriticos[1]

[1]Cervantes Agritech Pty Limited

Presenting author: darren@cervantesagritech.com

At our Athens meeting in 2022, IPRRG members accepted a challenge from EFSA and EPPO to address the topic of climate change and PRA, crafting a series of papers for a special edition of EPPO Bulletin. In this presentation I will report back on progress. I will also report on our efforts to engage with African pest risk practitioners and researchers.

2.1 *The potential global distribution of Corythucha ciliata* under current and future climate scenarios

Author: Jessica Kriticos[1,2]

[1]Australia National University, Canberra, Australia

[2]Cervantes Agritech, Canberra, Australia

Presenting author: jmkriticos@gmail.com

Corythucha ciliata, the sycamore lace bug, is a pest species originating from temperate North America that has since invaded areas of Europe, East Asia, and Australia due to human activity. It is known to have spread rapidly and widely across temperate Europe since its introduction in Italy in the 1960s. Records are also known from Santiago in Chile and Capetown in South Africa, although no further records are known within the latter two countries. The nymphs and adults feed on Platanus spp., which damages the leaves and reduces the ability of host trees to photosynthesise. If damage is severe, and especially when combined with drought conditions, infestation over multiple years may cause tree death. Platanus spp. are widely planted as ornamental urban trees across various continents, which suggests significant possible economic damage globally from current and future invasions.

To address the issue of an uncertain potential distribution of C. ciliata, we have created a CLIMEX model based on known ecophysiological tolerances and the current distribution records in its native and invaded ranges. Mapping the model under both current climate and a future scenario allows jurisdictions to consider climate changes in their pest risk analyses of C. ciliata. We fit the model based on the extensive laboratory work of Ju et al. and adjusted it to the native North American distribution, before fine-tuning it based on global distribution records.

2.2 Phytosanitary sampling methodologies for at-border interventions: A comparative review across jurisdictions

Authors: Nicholas P Moran[1], Anca M Hanea[1], Andrew P Robinson[1]

[1]Centre of Excellence for Biosecurity Risk Analysis (CEBRA) - University of Melbourne, Melbourne, Victoria, Australia[1]

Presenting author: nicholaspatrickmoran@gmail.com

Various methods may be employed at borders to manage the biosecurity risks of plants and plant products. The targeting, frequency, and unit-selection for border inspections can be designed to meet multiple goals, including data collection for pathway risk analyses, the detection and interception of pests, and incentivising stakeholders' compliance with phytosanitary requirements. We have reviewed published and grey literature on biosecurity interventions at borders, focusing on fresh produce inspections on import and passenger pathways. Our overall aim was to critically assess and compare the practices of biosecurity systems across the globe. We also sought to identify geographic limitations and knowledge gaps in the published research. In our review, we describe a framework for designing sampling methods to meet regulatory goals, including for targeting inspections, selecting the units for inspection (e.g., within produce consignments), and for background monitoring of pathway risks. Using the Australian state of Tasmania as a case study, we then describe how sampling methodologies may be designed to meet a jurisdiction's specific needs, protected values, and risk profile.

2.3 Pest survey toolkit and statistical tool RiPEST

Authors: Tomasz Kaluski[1], Sybren Vos[1], Ignazio Graziosi[1], Alice Delbianco[1], Jose Cortinas[1], Melanie Camilleri[1]

[1]European Food Safety Authority, Via Carlo Magno 1A, 43126 Parma, Italy

Presenting Author: Tomasz.KALUSKI@efsa.europa.eu

The European Food Safety Authority (EFSA) is actively engaged in the development of practical tools to provide support to EU Member States (MSs) in the planning, design, optimization, and reporting of plant pests' surveys.

To enhance these activities for Union quarantine pests, EFSA has developed the Pest survey toolkit with three integrated tools: Pest Survey Cards, RiPEST (Risk-based Pest Survey Tool), and Guidelines for statistically sound and risk-based surveys. The EFSA Pest Survey Cards offer guidance to EU Member States on relevant information to prepare surveys of quarantine pests in compliance with international standards and existing EU regulations. These cards provide up-to-date information on pest taxonomy, distribution, biology, plant hosts, potential establishment in the EU, factors associated with increased risk for entry and spread, and detection and identification methodologies.

The Risk-based Pest Survey Tool (RiPEST) is a comprehensive instrument designed to assist national plant protection organizations in designing statistically sound and risk-based surveys available on the r4eu platform (https://r4eu.efsa.europa.eu/). The tool enables the design of three types of surveys: detection, delimiting, and buffer zone surveys, each comprising preparation, design, and implementation steps. The flexibility of RiPEST allows

customization according to user requirements, with support provided through partially prefilled information from a relational database, which is currently in the developmental stage. This relational database aims to encompass relevant data on surveillance activities and plant pests in the form of tables and relations extracted from Pest Survey Cards.

Furthermore, EFSA is developing a multi-pest optimisation tool. It will optimise the number of field visits and samples collected for multi-pest surveys based on the feasible time window for surveillance activities and the choice of inspection units. This approach will result in more efficient resource allocation and cost-effective survey designs.

In conclusion, the European Food Safety Authority's development of practical tools such as RiPEST, a relational database, multi-pest optimisation tool, relational database, along with the existing Pest Survey Cards and Guidelines, exemplifies EFSA's commitment to enhance plant pest surveillance in the EU. These tools aim to empower risk managers and national plant protection organizations in their surveillance activities, leading to more effective pest control measures and safeguarding the EU's plant health and agriculture.

2.4 Horizon Scanning in Plant Health – a new dashboard to better communicate the results of the month

Authors: Sybren Vos[1], Sara Tramontini[1]

[1]European Food Safety Authority, Via Carlo Magno 1A, 43126 Parma, Italy

Presenting Author: Sybren.VOS@efsa.europa.eu

The activity of horizon scanning in plant health started with a mandate from the European Commission in December 2016. Since then, thanks to the collaboration with the Europe Media Monitor (EMM) team of the Joint Research Centre (JRC) and the cooperation of the French Agency for Food, Environmental and Occupational Health & Safety (ANSES), a long-term and continuous support to EU risk managers has been provided, by identifying signals of emerging threats from the information and data published on the web.

This project is continuously evolving and creating new attention also from different stakeholders. For this reason, EFSA has decided to make available a new tool in the form of an interactive dashboard, in order to satisfy the different needs and interests beyond its initial scope. The dashboard is composed by three sections:

- *emerging and new pests of the month: shown on a map reporting the locations and metadata connected to the news. In addition, a colour code identifies the PeMoScoring results, when available.*
- *priority pests: a graph shows real time the amount of traffic on the web connected to each of the 20 pests regulated as "priority pests" in the EU*
- *search engine: to easily retrieve the specific items published on the monthly newsletters since the start of the project by selecting pest (filtering by different taxonomic levels) and PeMo results*

3.1 Development of the CABI Pest Risk Analysis Tool: current status and future plans to support PRA capacity building.

Authors: Lucinda Charles[1], Marc Kenis[2], Norbert Maczey[3], Mary Lucy Oronje[4], [5]Gareth Richards.

[1]CABI, Wallingford, UK; [2]CABI, Delémont, Switzerland; [3]CABI, Egham, UK; [4]CABI, Nairobi, UK; [5]CABI, Wallingford, UK

Presenting author: l.charles@cabi.org

CABI has taken a stepwise approach to building a decision-support tool to assist the challenging task of pest risk analysis. The aim has been to guide the risk assessor through the stages of PRA following international guidelines as laid out by IPPC and provide access to pest information from the CABI Compendium that helps to build the scientific evidence for assessing risk and selecting risk management options that can be shared with stakeholders in a PRA report. Three types of risk analysis are available: pathway-initiated, for plant commodity imports; pest-initiated, where all potential pathways of entry for a single pest can be assessed; and live import, where the risk to plant health of intentionally introducing a living organism such a biological control agent or plant for planting is considered. The tool is proving useful in PRA training online and at face-to-face workshops because it has the flexibility to draw on data for any country, crop or pest enabling trainers to design a programme that follows the whole PRA process and is responsive the priorities of the participants. The online platform enables team working and an offline workflow is provided for situations where the internet is limiting. Under CABI's Plantwise Plus Programme, there is the opportunity to enhance the usability and decision support provided by the tool and guidance is sought from users and experts in the wider plant health community.

3.2 What makes a good risk-based decision in biosecurity?

Authors: Melanie Newfield[1], Raina Meha[2], Susanna Finlay-Smits[3], Christine Reed[4], and John Kean[5]

[1]Wellington, New Zealand; [2]AgResearch, New Zealand; [3]Manaaki Whenua Landcare Research, New Zealand; [4]Pukaha National Wildlife Centre, New Zealand; [5]AgResearch, New Zealand

Presenting author: melanienewfield@outlook.com

We all hope that our risk assessments will be used by decision makers, resulting in better decisions. But to know if risk assessments result in better decisions, we need to be able to judge the quality of decision, and this is surprisingly difficult. We interviewed 39 participants in Aotearoa New Zealand's biosecurity system to understand how they judged decisions. Participants were drawn from central government, local government, primary industry, infrastructure, non-governmental and Māori organisations, and included those making decisions as well as those affected by decisions. In semi-structured interviews, participants were asked what characterised a "good" biosecurity decision from their perspective. We used thematic analysis to identify emergent themes across participant responses. Although interview questions asked separately about biosecurity decisions, decision-making processes and decision makers, participant responses frequently conflated these, suggesting they are closely entwined. Outcome had an important influence on how decisions were judged. However, there were a number of other factors which participants considered important to good decision-making, including being well-informed, involving the right people in the right way, having a clear purpose, being transparent and being

based on long-term thinking. Participants spoke of the importance of making decisions promptly, but also of ensuring enough time was taken. These results differ from critical reviews of the biosecurity system by consultants and government reviewers, which typically focused on making well-informed, prompt, transparent and consistent decisions. The results contribute to a more nuanced understanding of what makes "good" biosecurity decisions from the perspectives of both decision makers and affected stakeholders.

3.3 A guide to optimising investment into pest risk controls at the border – a methodological perspective

Authors: Anca Hanea[1], Edith Arndt[1], Thao (TK) P Le[1], Chris Baker[1], John Baumgartner[1], and Andrew Robinson[1]

[1]The University of Melbourne, Melbourne, Victoria, Australia

Presenting author: anca.maria.hanea@gmail.com

Assessing the efficiency of border intervention activities and recommending statistically valid and trade-defensible inspection procedures involves a complex risk assessment and analysis. Close collaboration with stakeholders is key for defining a set of values at risk, hazards, and potential damages that can be reduced or mitigated against through (pre) border interventions. A biosecurity risk analysis that focuses on the benefits of border interventions involves modelling 1) the values at risk (i.e., the economic, environmental, social, or human health values that are being protected by the biosecurity system), 2) the hazards (i.e., potential pests that may damage the values at risk), 3) the establishment rates (rates at which pests can establish in the protected area), and 4) the potential damages (the impacts on the values at risk that arise from establishment of the pest). To model and parametrise these four components, we first need to understand the complexities and represent them to a close approximation. A conceptual model can then guide the development of a simulation model whose output is the amount of undetected/leaked contamination. This amount can be further used as an input to a separate model that is able to simulate pest and disease spread and estimate potential damages. When the simulation model includes options to adjust policy, changes in undetected contamination under a range of candidate policies can be compared and used to fine tune border inspection policies to achieve particular risk mitigation objectives. This talk will cover a proof-of-concept modelling exercise concerning biosecurity risks posed by sea containers.

3.4 Exploring the impact of escalating demand for sub-tropical fruit crops on emerging pests in Europe

Authors: Eduardo de la Peña[1]

[1]Spanish National Research Council (CSIC), Málaga, Spain

The cultivation of subtropical fruit crops in Europe was a associated to a few insect pests and was limited to specific regions in southern Europe with a favorable year-round climate. However, escalating demand for these commodities, coupled with climate change, is altering the pest landscape and expanding agricultural areas across the Mediterranean. Consequently, the growing cultivation of subtropical crops in Europe has led to increased demand for planting materials, resulting in a substantial rise in imports of nursery items and plants from third

countries. This surge in imports likely facilitated the introduction and establishment of various emerging pest species throughout the Mediterranean region. Notable pests include Sternochetus mangiferae, Aulacaspis tubercularis, Scirtothrips dorsalis, S. aurantii, and S. citri. Understanding the causes and implications of these emerging pest threats is crucial to safeguarding the future of subtropical fruit cultivation while protecting traditional Mediterranean crops. This paper briefly analyzes the escalating threats posed by emerging pests to subtropical fruit orchards in Europe, focusing on mango. The findings emphasize three important actions: 1) assessing and modeling climate change's impact on pest dynamics; 2) conducting comprehensive pest risk assessments and identifying introduction pathways resulting from increased importation of nursery materials and plants; 3) developing and implementing sustainable integrated pest management (IPM) strategies essential for preserving plant health in these crops

4.1 A Look at stakeholder engagement in the UK with a focus on the emerging vineyard industry

Authors: Dani Lindley-Klassen[1]

[1]Department for Environment, Food and Rural Affairs, United Kingdom

Presenting author: dani.lindley-Klassen@defra.gov.uk

A short presentation on risk communication and stakeholder engagement in the emerging UK wine industry. This talk looks at the different ways that risk communication has happened in the UK for the vitis industry both for known plant health threats as well as those on the horizon. Looking at conveying information about possible risks from Xylella fastidiosa (Pierces' disease) and Lycorma delicatula (Spotted lanternfly) in particular. This presentation also covers the relationship development in the wine industry from the initial stages of stakeholder engagement to more meaningful effective engagement as well as spin-off engagement projects. Public engagement projects are also discussed that have occurred in recent years, both at trade shows and from recent outbreaks.

4.2 Collaboration with social scientists for a better understanding of social impacts within PRA

Authors: Alan MacLeod[1], Clare Hall[2]

Department for Environment, Food and Rural Affairs, Sand Hutton, York, North Yorkshire, United Kingdom[1]; Forest Research, Northern Research Station, Roslin, Midlothian, United Kingdom [2]

Presenting author: alan.macleod@defra.gov.uk

The current principal IPPC international standard for pest risk analysis (ISPM 11) recognises that pests can have economic, environmental, and social impacts. What exactly social impacts includes is not well explained in ISPM 11. Pest risk analysts in the UK have collaborated with social scientists to better understand what is meant by social impacts and to identify how they might be incorporated into protocols for PRA. This presentation will outline the findings of the collaboration which focussed on social impacts as they relate to tree pests and diseases. Social impact refers to the effects experienced, physically, cognitively or emotionally by people at an individual or group level. Some key features of social impacts are that they are often indirect secondary impacts, context-specific, hard to quantify, vary through time and differ between groups of people. Interestingly, substantial social impacts may arise from mitigation or management of pest outbreaks. Categories of social impact that may be appropriate to consider when assessing pest impacts include impacts on recreation and peoples habitual land use and related behaviours, employment and cultural values. Social impacts can also include impact on peoples' health and well-being, both physical and psychological. This presentation will provide examples of social impacts, suggest how awareness of social impacts may be raised and suggest methods of how to include social impacts within PRA protocols for a more comprehensive understanding of the range of impacts caused by plant pests.

4.3 Agrochemical handling health complaints and cocoa farmers' safety compliance in the Ashanti region of Ghana

Authors: Abayomi S Oyekale[1]

[1]Department of Agricultural Economics and Extension, North-West University Mafikeng Campus, Mmabatho 2735 South Africa

Presenting author: asoyekale@gmail.com

Agrochemicals are essential inputs in cocoa production. Recently, changes the distributional patterns of weeds, pests and diseases on cocoa farms have necessitated more utilization of agrochemicals. Also safety compliance are low with some health consequences. This paper analyzed the effect of agrochemical post-handling health complaints on cocoa farmers' compliance with safety instructions. The data were collected from 246 farmers using stratified sampling procedure. Fifteen safety instructions were identified, and farmers' compliances were analyzed using the Negative Binomial Regression. The results revealed that although many farmers complied with basic agrochemical handling instructions like avoiding touching them with bare hands, not inhaling and avoiding food contamination, majority did not wear recommended personal protective equipment. Specifically, only 44.31%, 33.74%, 32.52% and 34.55% were using hand gloves while using insecticides, herbicides, fertilizers and fungicides, respectively.

The major health complaints after handling agrochemical were skin irritation (37.80%), eye irritation (33.33%), headache (32.93%), nasal discharge (20.33%), and cough (16.67%). The Negative Binomial Regression results revealed that across the different forms of agrochemicals, farmers with post chemical handling skin irritation had significantly higher ($p<0.05$) log of agrochemical compliance, while those with breathing difficulties had significantly lower compliance. Awareness of safety precautions also significantly increased the log of safety compliance ($p<0.05$). In addition, as cocoa land areas increased, the log of safety compliance significantly increased ($p<0.05$). It was concluded that agrochemical safety compliance can be promoted by promoting awareness on essential safety precautions and the health consequences of non-compliance, with emphases on skin irritation and breathing difficulties.

POSTERS ABSTRACTS

(ARRANGED IN ORDER OF PRESENTATION)

1.1 Surveillance of non-EU Tephritidae in the EU

Authors: Ignazio Graziosi[1], Melanie Camilleri[1], Giulia Mattion[1], Sybren Vos[1], Kostas Zarpas[2], V Rodovitis[2], Georgia Papadogiorgou[2], Elma Bali[2], Nicos Papadopoulos[2]

[1]European Food Safety Authority, Via Carlo Magno 1A, 43126 Parma, Italy

[2]University of Thessaly, Department of Agriculture Crop Production and Rural Environment

Presenting author: Ignazio.GRAZIOSI@efsa.europa.eu

True fruit flies (Diptera: Tephritidae) are a prominent group of invasive species of plant globally. Several taxa of non-EU Tephritidae are regulated as Union quarantine pests in the EU. We prepared pest survey cards targeting regulated Tephritidae in the context of the EFSA mandate on plant pest surveillance at the request of the European Commission. Eight crop-specific survey cards can be used for preparing crop-based surveys. The surveillance of all species of quarantine non-EU Tephritidae is ensured by surveying all the relevant crops present in the survey area, affecting: 1) Asteraceae, 2) citrus, 3) Cucurbitaceae and Solanaceae, 4) ornamental plants, bamboo and tea seeds, 5) stems and leaves of cereals and vegetables, 6) stone, pome fruits and berries, 7) tropical and subtropical fruits, 8) walnuts. A database summarizing the available information on regulated non-EU Tephritidae relevant for surveillance is also available. The poster visualizes the biology of the taxa of Tephritidae affecting the eight crops and provides direct access to the pest survey cards through a QR code. Pest survey cards are part of the EFSA Plant Pest Survey Toolkit, which has been developed to assist the Member States with planning a statistically sound and risk-based pest survey approach in line with current international standards.

VENUE:

The Kenya Plant Health Inspectorate Service Conference Centre (KECC) offers a tranquil and serene environment, providing a respite from the bustling city center. Situated in the heart of Karen, approximately 22 km from the City Centre, KECC boasts convenient accessibility to shops, malls, banking facilities, and the renowned Nairobi National Park.

AIRPORT TRANSPORTATION: The hotel is situated approximately 30 km from the airport. We do not recommend using the shuttles available in the arrival's hall or in front of the terminal. Instead, we have partnered with a local transportation company, recommended by our organizers, where you can easily arrange your shuttle service. Please follow the provided link to book your transportation.

Pride Drive Limited - Car Rental Agency in Nairobi (business.site)

ROUTE FROM THE AIRPORT TO KEPHIS