

PLANT HEALTH WITHOUT BORDERS

International collaboration to underpin policy at
national, regional and international level



Powered by Contractual Research Unit Federal Public Service Health, Food Chain Safety and Environment

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belgium24.eu

health.belgium.be



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INTRODUCTION

GENERAL INTRODUCTION

We are delighted to welcome you to Brussels for the symposium 'Plant Health Without Borders', hosted by the Belgian Presidency of the Council of the European Union. This event, which is co-organised with the Horizon Europe EUPHRESKO III project consortium, takes place at the Belgian Institute of Natural Sciences. This unique location vastly reminds us of our task as humans to take care of our planet's health in all its dimensions. On this very same location, in March 2020, the Royal Mint of Belgium and the Federal Public Service Health, Food Chain Safety and Environment launched a commemorative two EURO coin to promote the International Year of Plant Health.

In continuation of that initiative and to build on the idea of 'protecting plants, protecting life', the United Nations has designated the 12th of May as the International Day of Plant Health, to draw continued global attention to how protecting plant health can help end hunger, reduce poverty, protect biodiversity and the environment, and boost economic development.

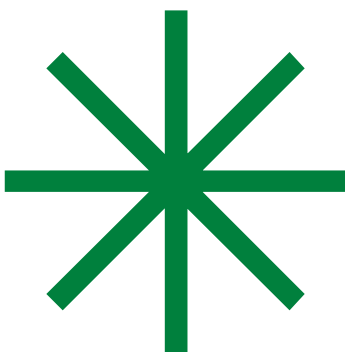
Using the momentum of the International Day of Plant Health, the Belgian Presidency would like to emphasize the importance of collaboration in plant health at all levels - national, regional, and international. Plants are the basis for life on earth: they provide us with air to breathe and food to eat. As such, plant health is considered as a public good, and its protection is more than justified. Today, due to global warming and human activities such as trade and travel, plants are under severe pressure. Invasive pest species are one of the main drivers of biodiversity loss and threaten the delicate balance of life that sustains our planet. Plant pests can cause catastrophic economic and ecological damage. All stakeholders - policy makers, the agricultural sector, researchers and the general public - share the responsibility to take up the challenge to tackle this threat.

As the title of the symposium - 'Plant Health Without Borders' - so elegantly describes, plant pests do not stop at our borders, so neither should collaboration.

Our vision goes further than just crossing geographical borders. Building on the 'One Health' approach, the Belgian Presidency looks beyond the borders of plant health and highlights its interconnections with human, environmental and animal health.

The symposium comprises inspirational talks on the importance of collaboration in plant health policy, on the need and benefits of international research collaboration and on future challenges and ways to tackle them.

As the symbol for the symposium, we have chosen the asterisk. This symbol not only represents the multiplication of networks and the



sharing of knowledge, but also evokes the shapes of many plants and flowers found in nature.

Enjoy, be inspired and become part of the plant health community that crosses borders!

BELGIAN PRESIDENCY OF THE COUNCIL OF THE EUROPEAN UNION



From 1 January to 30 June 2024, Belgium assumes the presidency of the Council of the European Union (EU) for the 13th time. This role involves a variety of responsibilities. As the Council's president, Belgium will oversee its operations and foster collaboration among member states.

The Council Presidency rotates every six months among EU members, organized in groups of three known as a 'trio.' Together, this trio develops a general programme, also referred to as the 18-month programme. Belgium forms a trio with Spain, the preceding holder, and Hungary, which will succeed Belgium. The Belgian Presidency holds significance due to its timing, coinciding with the European elections in June 2024.

Under the Belgian Presidency, over 530 informal and around 2000 formal meetings will take place. These include preparatory sessions and informal meetings of national representatives in Council working groups, bringing together Member States' Ambassadors with EU officials, as well as ministerial meetings and summits, attended by heads of state and government. At the ministerial and head of state level alone, nearly 150 formal and informal meetings will be organised. Additionally, a range of events will be organised across Belgium, including Brussels – the capital of the EU.

In the domain of agriculture and fisheries (also known as AGRIFISH), the Belgian Presidency will promote a holistic approach. Ensuring food security and autonomy will be core objectives of the Presidency, as well as further enhancing the sustainability of food production and consumption. The Belgian Presidency will also pay particular attention to animal health and animal welfare, and to the need for resilient forests.

It is also in this perspective that the symposium 'Plant Health Without Borders' is organised, as the Belgian Presidency strongly believes in the 'One World, One Health' approach, emphasizing the interconnectedness of human, environmental, plant, and animal health.

Want to know more about the Belgian Presidency of the Council of the European Union?

→ Visit Belgian presidency of the Council of the European Union [europa.eu]

DIRECTORATE GENERAL ANIMALS, PLANTS AND FOOD



Health
Food Chain Safety
Environment

The Federal Public Service Health, Food Chain Safety and Environment [FPS Health] aims to be the Belgian promoter of the 'One World, One Health' principle by placing the 4 pillars of health [human health, animal health, plant health and the health of the planet] at the centre of its concerns and missions.

It oversees healthcare operations in Belgium, including financing hospitals, coordinating emergency medical assistance, and developing healthcare policies.

The FPS Health ensures the safety of products throughout the entire food chain and monitors animal and plant health to maintain a high-quality environment.

As a standard-setting body, the FPS Health ensures compliance with health regulations and standards. It employs proficient experts who conduct analyses or furnish scientific studies to aid policymakers in making informed decisions based on objective data.

To position itself as a point of reference in health matters, the FPS Health collaborates with regional, European, and global bodies.

In short, the FPS Health is a key player in the Belgian healthcare system, diligently working to protect and enhance the health of all citizens while upholding healthcare safety and quality standards.

The DG Animals, Plants and Food is one of the three Directorates General within the FPS Health. DG Animals, Plants and Food establishes the regulations and standards for the health and quality aspects of all products at every stage of the food chain.

Additionally, it oversees policy and control measures pertaining to tobacco, alcohol, cosmetics, animal by-products not intended for human consumption, and the supervision of field trials involving genetically modified organisms.

In terms of plant health, the DG Animals, Plants, and Food formulates overarching policies, establishes standards for plant protection, monitors the presence of harmful organisms within Belgian territory, and manages the Plant Fund.

Want to know more about the Federal Public Service Health, Food Chain Safety and Environment?
→ Visit www.health.belgium.be/en or contact us via apf.dg@health.fgov.be.

CONTRACTUAL RESEARCH UNIT

Scientific research is a fundamental pillar of the Federal Public Service Health, Food Chain Safety and Environment (in short, the FPS Health). Today, the Contractual Research Unit attached to Directorate General Animals, Plants and Food is your host for this symposium. Comprising three scientific advisors and two administrative staff members, this team oversees the research programme focusing on plant health, animal health, and food safety. Under the auspices of the Evaluation Committee with representatives from the FPS Health, the Federal Agency for the Safety of the Food Chain (FASFC) and the Belgian universities, the Contractual Research Unit allocates funding to national and transnational research projects that inform policy in these domains. This approach allows the FPS Health to uphold a science-based policy, where policymakers draw upon objective scientific data and expertise to shape legislation, control programmes, develop strategies for risk assessment and risk management, to tackle crisis, and to prioritise responses to emerging risks.

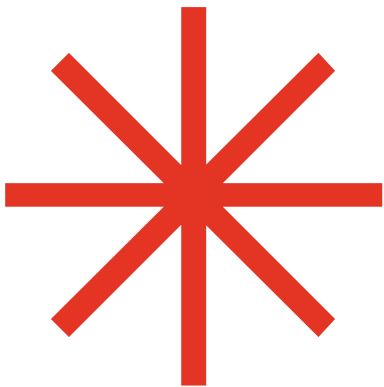
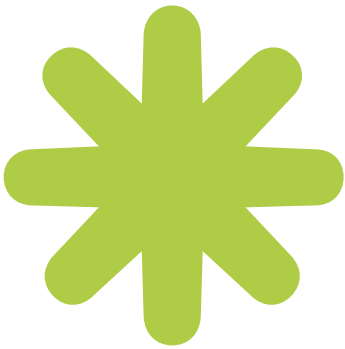
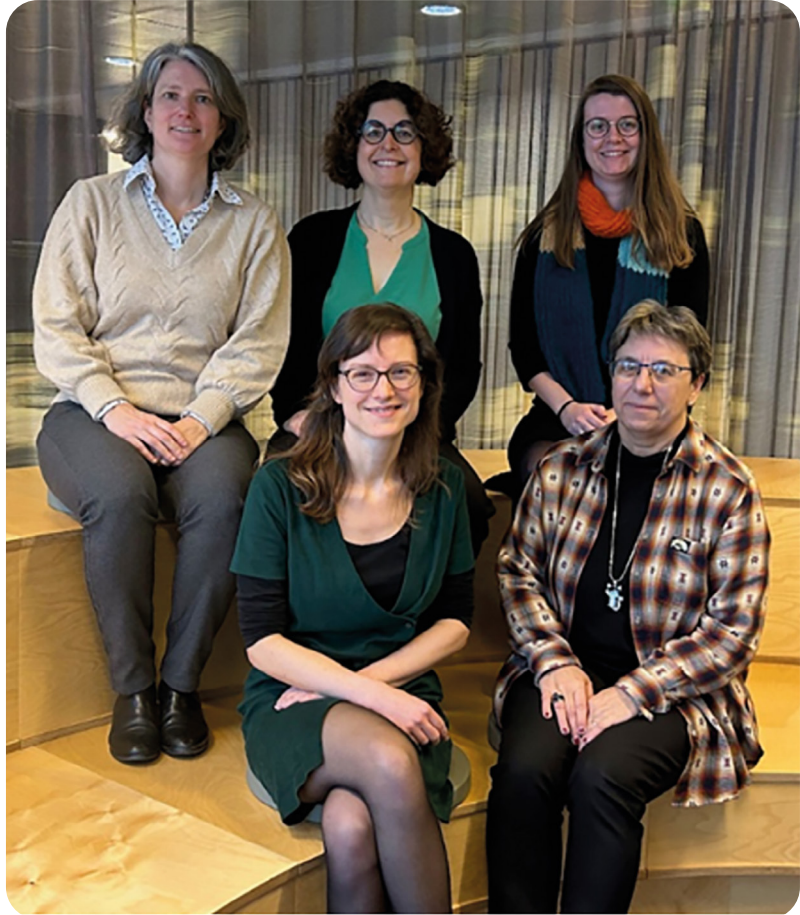
The annual call for proposals welcomes both top-down and bottom-up submissions that fit into the framework of policy support in the aforementioned domains. While the majority of projects address nationally defined priorities, a growing number are part of a broader transnational research.

All calls are competitive and open to all Belgian research institutes, with a rigorous selection and evaluation process, including peer review, ensuring the high quality of the funded research projects. In transnational projects, the FPS Health funds the Belgian research institutions taking part in the international consortium.

With an annual budget of about 5,8 million euros, approximately 25% is allocated to plant health research, facilitating the funding of about five new plant-related projects each year.

The FPS Health has been a partner of Euphresco since its inception as an ERA-NET project (see p. 11). In 2014, its legislative framework was adapted, removing barriers for funding Belgian research institutes in transnational projects. Since then, the FPS Health has co-funded approximately two to three new Euphresco projects every year.

Want to know more about the Contractual Research Unit?
→ Visit Contractual Research | FPS Public Health (belgium.be) or contact us via contractual.research@health.fgov.be





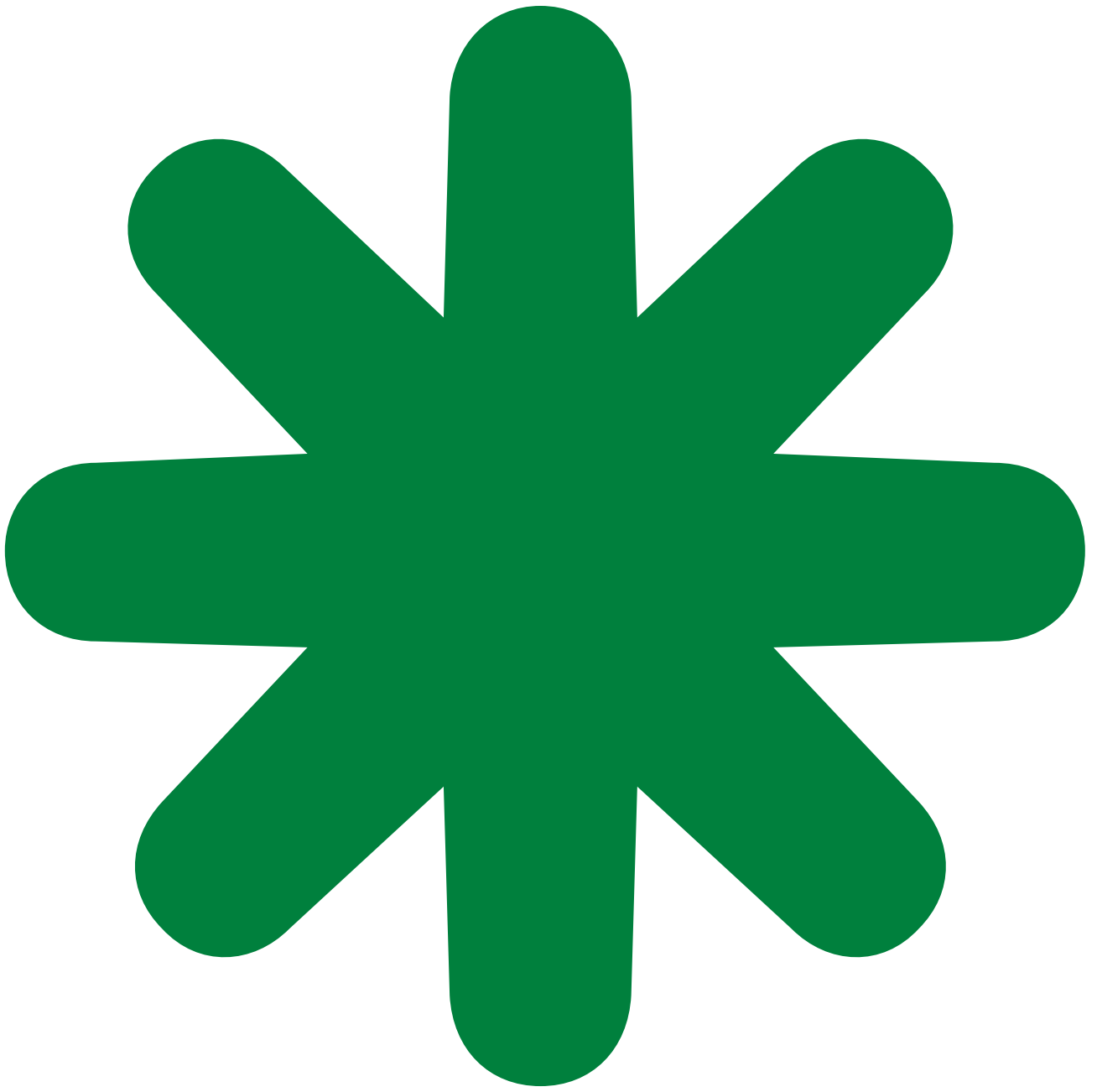
The challenges currently addressed by the EU research and innovation policy are truly global in nature and require significant capacities, resources and sophisticated infrastructure that cannot be found within the limits of a single country. Extending the organization of research and innovation beyond national borders allows to reconcile the tension between global research challenges and research spaces that are largely nationally organized.

Since the 6th EU Framework Programme, ERA-Net projects have been funded to support the alignment of national research efforts. EUPHRESCO was one of the first ERA-Net projects initiated to support the strategic, operational and financial alignment of plant health public to public research partnership. After receiving two rounds of EU funding, Euphresco has become a self-sustained network in 2014, gradually expanding outside the EU. The success of Euphresco as a primarily European network for phytosanitary research coordination has set the ground for discussions on the development of initiative(s) to address the needs of other regions of the world and global phytosanitary research coordination. The recently funded EUPHRESCO III project¹ aims to build on the foundations of the two ERA-NET projects and of the Euphresco self-sustained network and to set the foundations for global phytosanitary research coordination.

[1] This project has received funding from the European Union's HORIZON-WIDERA-2023-01-01 under grant agreement N° 101130467

The EUPHRESCO III project will allow to develop and test the governance, operations and activities that deepen research coordination at national and regional level, and that widen the relevance and impact of joint activities at regional and global level. Increased synergies amongst national research programmes and activities at global level will trigger cost-efficiencies in research financing; will enhance the level of scientific performance; will contribute to capacity building and harmonization of practices and will maximise the research impact on policymaking and innovation, which will allow to tackle more effectively societal challenges.

The EUPHRESCO III network builds upon the activities of organizations with a long history of coordinating plant health in their respective region: ACIAR, APAARI, CABI, CIHEAM-Bari, CFIA, Euphresco, KHA, PBRI, INIA-CSIC, PFR, USDA. The participation in the EUPHRESCO III activities of organizations that are industry representatives (ABIOPEP, AGDIA, BIOREBA, PBRI, ISF) will create synergies between the research programming activities of the institutional policymakers and research funders and the industry programmes. This will contribute to the development of products that suit the needs and expectations of the end-users. Links with policymakers will allow research evidence to be translated into regulation.



PROGRAMME

TIME	TOPIC
12:30	Short welcome by Dr. Ria Nouwen (FPS Health, Food Chain Safety and Environment)
12:30 – 14:00	Lunch & knowledge forum
14:00	Start symposium
14:00 – 14:10	Introduction by the Deputy Prime Minister and Minister for Agriculture of Belgium
14:10 – 14:40	Policy needs & view on international collaboration: <ul style="list-style-type: none"> – Ms. Claire Bury (European Commission) – Dr. Osama El-Lissy (IPPC)
14:40 – 15:30	Examples of plant health networks and activities: <ul style="list-style-type: none"> – Dr. Baldissera Giovani (Euphresco) – Dr. MaryLucy Oronje (CABI) – Mr. Pablo Gomez Grande (INIA – CSIC) – Dr. Tobin Robinson (EFSA)
15:30 – 16:10	Testimonies: advantages of international collaboration <ul style="list-style-type: none"> – Dr. Tim Beliën (pcfruit npa) – Dr. Kris De Jonghe (ILVO) – Dr. Perrine Portier (INRAE) – Dr. Anna Maria D’Onghia (CIHEAM Bari)
16:10 – 16:55	Coffee break & knowledge forum
17:00 – 17:40	EUPHRESCO III <ul style="list-style-type: none"> – Dr. Baldissera Giovani (Euphresco) – Dr. Anorbayev Azimjon Raimqulovich (Research Institute of Plant Protection and Quarantine, Uzbekistan)
17:40 – 17:50	Final conclusions by Dr. Ria Nouwen (FPS Health, Food Chain Safety and Environment)
18:15	Group photo
18:30	Walking dinner
21:30	End

KNOWLEDGE FORUM

During the breaks, a knowledge forum is organised. While you are enjoying your lunch or coffee, we invite you to walk around and have a look at the posters presenting the activities of stakeholders involved in plant health.

OVERVIEW OF THE POSTERS (IN ALPHABETICAL ORDER)

CABI

CABI Bioprotection Portal

Contact details:
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bioprotectionportal.com

CABI PlantwisePlus

Contact details:
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www.plantwiseplus.org

EUPHRESCO

Building global phytosanitary research coordination: work in progress

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EUROPEAN FOOD SAFETY AUTHORITY (EFSA)

EFSA Plant health support to crisis preparedness

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Plant Health 4 Life: making the link between plant health and our everyday lives

Contact details:
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For questions on the #PlantHealth4Life campaign:
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EUROSEEDS

Healthy seed for a healthy crop

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FEDERAL AGENCY FOR THE SAFETY
OF THE FOOD CHAIN (FASFC)

Plant health & Food security – The FASFC watches over the health of
our plants every day!

Contact details:

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www.fasfc.be

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Dep. COPHS Michaël Colson

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FOOD CHAIN SAFETY AND ENVIRON-
MENT – CONTRACTUAL RESEARCH
UNIT

Programming research activities to underpin plant health,
animal health and food safety

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FEDERAL PUBLIC SERVICE HEALTH,
FOOD CHAIN SAFETY AND
ENVIRONMENT – DG ANIMALS,
PLANTS AND FOOD

A directorate general serving plant health

Contact details:

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FLANDERS RESEARCH INSTITUTE
FOR AGRICULTURE, FISHERIES AND
FOOD (ILVO)

Supporting plant health policy with scientific expertise, unveiling the
power of international collaboration

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www.ilvo.vlaanderen.be

FREE UNIVERSITY OF BRUSSELS
(ULB)

The English Channel is not a border anymore for the major continental forest pest, *Ips typographus* (Coleoptera, Scolytinae)

Contact details:

Main authors:

Blake, Max; Inward, Daegan (Forest Research, Alice Holt, UK)

Webb, Cerian (Cambridge University, UK)

Grégoire, Jean-Claude (ULB, Belgium) jean-claude.gregoire@ulb.be

INTERNATIONAL CENTRE FOR
ADVANCED MEDITERRANEAN
AGRONOMIC STUDIES (CIHEAM),
MEDITERRANEAN AGRONOMIC
INSTITUTE OF BARI

CIHEAM Bari: a bridge to network plant health research in the Mediterranean regionx

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INTERNATIONAL SEED
FEDERATION (ISF)

Enhancing Global Agriculture: The Role of the Regulated Pest List and the International Seed Health Initiative in Promoting Seed Health.

Contact details:

Dr. Souza Richards (Rose)

Phytosanitary Affairs Manager

International Seed Federation (ISF)

R.SouzaRichards@worldseed.org

NATIONAL RESEARCH INSTITUTE
FOR AGRICULTURE, FOOD AND
THE ENVIRONMENT (INRAE)

Evaluation of MALDI-TOF MS for the identification of plant-pathogenic bacteria

Contact details:

Cécile DUTRIEUX(1), Géraldine TAGHOUTI(1), Audrey LATHUS(1), Claire DARRIGO(2), Perrine PORTIER(1)

[1] Univ Angers, Institut Agro, INRAE, IRHS, SFR QUASAV, CIRM-CFBP, F-49000 Angers, France

[2] ISP, INRAE, Université François Rabelais de Tours, UMR 1282, CIRM-BP, F-37380, Nouzilly, France

perrine.portier@inrae.fr

PLANTS FOR THE FUTURE ETP

Plants for the Future – Promoting the flow of innovation to the market

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Plants for the Future ETP

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amrit.nanda@plantetp.eu

RESEARCH STATION FOR FRUIT
GROWING NPA (PCFRUIT NPA)

Monitoring and (data-driven) surveillance of invasive organisms
threatening Belgian and European fruit growing

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tim.belien@pcfruit.be
www.pcfruit.be

RESEARCH STATION FOR VEGETABLE
PRODUCTION

The Role of Research Centers in Tackling Quarantine Viruses

Contact details:

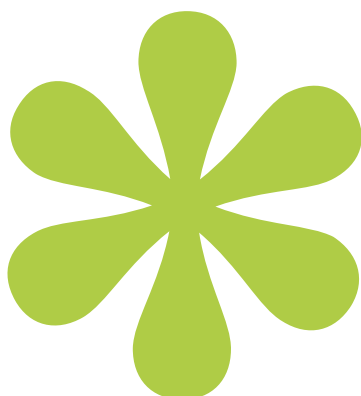
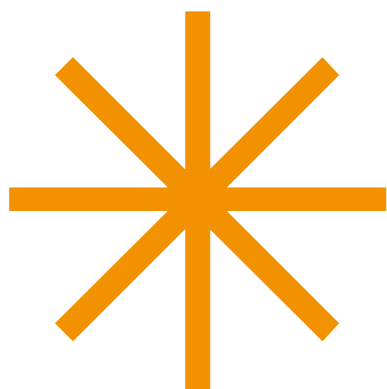
Evelien Aussems
Evelien.aussems@proefstation.be
0032 479 79 82 90

WALLOON AGRICULTURAL
RESEARCH CENTRE (CRA-W)

Entomological monitoring by the Walloon Agricultural Research Center
in the context of plant health

Contact details:

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Crops and forest Health Unit
Walloon Agricultural Research Centre
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TALKS

INTRODUCTION BY THE DEPUTY PRIME MINISTER AND MINISTER FOR AGRICULTURE OF BELGIUM

Building on the 'One World, One Health' approach, the Belgian Presidency looks beyond the borders of plant health and highlights its interconnections with human, environmental and animal health.

POLICY NEEDS AND VIEW ON INTERNATIONAL COLLABORATION

Using the momentum of the International Day of Plant Health, the keynote speakers from the European Commission and the International Plant Protection Convention (IPPC) emphasise the importance of collaboration in plant health policy.



EU PLANT HEALTH POLICY IN AN INTERNATIONAL CONTEXT

Ms. Claire Bury
Deputy Director-General in DG Health and Food Safety
European Commission

Increased global trade, climate change and movement of people result in new plant pests spreading and affecting our crops and our natural environment. The International Plant Health Day helps to create awareness. Plant pests are not an isolated problem, but they are part of the more global umbrella of 'One Health'. They impact people's life and therefore their control requires similar strategies as other infectious organisms, being at EU or at international level.

The pests are many, the emerging risks appear often, and swift actions are essential. Reinforcement of national and regional and even broader global systems is needed. Emerging plant pests are a clear example of the increased need for improvement of alert and response systems, including survey systems, information, and cooperation.

The EU and its Member States are participating actively within European and Mediterranean Plant Protection Organization (EPPO) and International Plant Protection Convention (IPPC) globally in contributing scientifically and financially to their strategic objectives. Furthermore, the EU's research activities supporting issues related to plant health issues have a strong element of international cooperation.



THE IMPORTANCE OF INTERNATIONAL COLLABORATION IN ACHIEVING GLOBAL DEVELOPMENT OBJECTIVES

Dr. Osama El-Lissy

Secretary

International Plant Protection Convention (IPPC)

Rome, Italy

Invasive plant pests can enter a country that lacks a well-functioning national phytosanitary system without being detected. Once introduced, these pests cause significant damage to plant production, including food crops; negatively impacting the environment; and hindering regional and international trade of agriculture products. According to documented reports, globally, annual crop losses to plant pests are estimated to be between 20 to 40 percent of production. In Africa, crop yield losses due to pests are even higher, estimated between 30 to 60 percent. While plant pests continue to cause significant losses in food crops, the number of people affected by food shortages in the world continues to surge. According to FAO, the number of people affected by hunger increased from 811 million in 2020 to 828 million in 2021. In terms of economic impact, plant diseases alone cost the global economy around USD 220 billion annually. International collaboration is the single most important element in reducing the global risk of plant pests eroding the world's progress towards food security and sustainable trade in agricultural commodities. When countries collaborate, they share information, agree to adhere to mutually beneficial standards and processes to reduce pest risk and take collective action to monitor and respond to pest outbreaks at regional and international levels.

The International Plant Protection Convention (IPPC), an international treaty involving 185 countries, is the world's standard setting body that provides the relevant environment for countries to collaborate in ensuring plant protection from pests and diseases. The mission of the IPPC is to protect plant resources from invasive pests and diseases and to facilitate safe trade of agricultural products. The IPPC fulfills its mission by working with its 185 contracting parties to develop and implement International Standards for Phytosanitary Measures (ISPMs). ISPMs provide the necessary foundational framework for phytosanitary management, ranging from pest risk assessment to risk mitigation.

Through the Commission on Phytosanitary Measures (CPM), the main governing body of the IPPC, contracting parties review the state of plant protection in the world and the actions to control the introduction and spread of plant pests worldwide. Countries can share experiences on tackling some of the most problematic pests in their territories as well as their preparedness efforts to stave off any pest incursions.

Based on the above context, the IPPC worked with cooperators at the national, regional, and global levels to develop and implement the first ever global phytosanitary programme. The programme is designed to enable national competent authorities and stakeholders to timely detect



plant pests of regulatory, economic, and environmental significance. The program positions national governments and stakeholders to prepare for, respond to, and recover from plant pests and diseases in the most effective manner.

Given the challenge of managing plant pests and lack of consistent phytosanitary systems, Africa was chosen to be the region where the programme begins, hence the Africa Phytosanitary Program or APP. This report provides an insight into the importance of adopting and implementing evidence-based policy and international collaboration in tangibly addressing complex plant health problems, and essential global development issues.

EXAMPLES OF PLANT HEALTH NETWORKS AND ACTIVITIES

Examples of plant health networks and activities, their added value, relevance and opportunities for collaboration and coordination are presented.



EUPHRESCO: THE PLANT HEALTH RESEARCH FORUM

Dr. Baldissera GIOVANI

Euphresco

21 Bd Richard Lenoir, 75011 Paris, France

bgiovani@euphresco.net

At the EC Council Working Party meeting of the Chief Officers of Plant Health Services (COPHS) on 6 December 2004, a Presidency note on the need to revive the scientific basis of the phytosanitary field was unanimously supported. This included a proposition to develop an ERA-Net project for phytosanitary research, as well as other measures. The European Phytosanitary Research Coordination (EUPHRESCO) network started in 2006 to strengthen the European Research Area by supporting the cooperation and coordination of research activities in the field of plant health.

By supporting the activities of phytosanitary research programme owners and programme managers, EUPHRESCO aimed to achieve three main goals:

- Develop phytosanitary research policy at the EU-wide level;
- Optimise the research provision that underpins EU quarantine plant health policy development and policy implementation;
- Increase the capacity of European phytosanitary science and research, in order to prevent the disappearance of EU expertise in this field.

After receiving funding from the FP6 and FP7 EU Framework Programmes (EUPHRESCO I and EUPHRESCO II ERA-Net projects),

Euphresco has become a self-sustained network.

The presentation will provide an overview of the development of Euphresco and of the activities carried over to support research coordination and collaboration in Europe and internationally.



PLANT HEALTH WITHOUT BORDERS: EXAMPLES OF PLANT HEALTH NETWORKS AND ACTIVITIES FROM AFRICA

Dr. MaryLucy Oronje
CABI
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International collaboration and coordination are an essential component of plant health management at national, regional and global levels. It is a cornerstone for the development of policy framework that guide national, regional and global plant health management strategies and actions. Frameworks like the IPPC and ISPMs are essential in providing guidelines for standardisation and harmonisation of regulations, standards and protocols for plant health management across countries, thereby facilitating safe international trade.

The need for international collaboration and coordination in plant health management has become more urgent today than ever. The rapid globalisation of trade increased international travel and changing climatic circumstances all catalyse accelerated spread of insect pests, pathogens, and invasive species. Maintaining an effective plant health system under such circumstances require robust and well-coordinated management strategies, enabled through national, regional and international collaboration.

This presentation provides an insight on national, regional and international collaboration and coordination with respect to plant health networks and activities within the context of the African continent. It highlights recent examples of how such collaboration add value to plant health management efforts at the three operational levels (national, regional, global).

Over the years, a number of national, regional and global plant health crises have demonstrated the critical role international collaboration and coordination plays in ensuring effective plant health management. In Africa the plant health crises which stand out include (i) Fall armyworm (*Spodoptera frugiperda*), first reported in Nigeria in (2016/2017) (ii) *Fusarium oxysporum* [Foc TR4] detected in Mozambique in (GGG), (iii) Tomato leaf miner [*Phthorimaea absoluta*] (iv) Fruit fly [Diptera: Tephritidae] and (v) Maize Lethal Necrosis Disease [MLND].

With the exemption of the *Fusarium oxysporum* [Foc TR4] in Mozambique, all the remaining pests have been managed, but after spreading to countries beyond the initial point of detection. This was due to a number of

factors that militated initial collaboration and coordination needed to contain further spread. Inadequate information sharing and transparency in the same, inadequate resources to facilitate collective rapid response to contain the pest, inadequate expertise horizon scanning to identify potential plant health risk, inadequate national level collaboration and coordination and inadequate implementation of policies to support Technical Assistance, pest reporting, and international cooperation all contributed to the initial spread.

The case of FAW demonstrate the benefit of international collaboration and multidisciplinary approach. FAW was initially detected in 2016 in Nigeria and with limited knowledge about the pest's biology, behaviour, and management strategies, the pest rapidly spread to other countries across the continent in 2017. The ensuing international multi-institutional collaboration enabled rapid pest identification, monitoring, and the development of management strategies and approaches. International collaboration is ongoing on aspects of Integrated Pest management, breeding for resistance, surveillance, and monitoring including the use of biological control agents and biopesticides.

At national level, there are good examples of collaboration and coordination activities which have produced positive results with respect to plant health management. We at CABI are currently working with national-level stakeholders in over 10 countries through the Plantwise program to promote system's approach to plant health management by catalysing collaboration between national plant health stakeholders. The implementation of Plantwise has provided a number of important lessons, demonstrating the power of harnessing plant health expertise resident in different partner organisations including private sector and highlighting how overlapping institutional frameworks and mandates may delays action and cross learning.

The Multi-institutional Technical team [MITT] in Kenya is another good example of how national level plant health networks and activities could bolster plant health management within national boundaries and cross border. The networks was set up as a partnership between, public, private and international organisation with the objective of rapid response to [Phthorimaea absoluta] and other pest incursions. The network has since made it possible to efficiently manage FAW and Golden Apple snail than would have been possible otherwise.

The recent case of *Fusarium oxysporum* [Foc TR4] in Mozambique and its subsequent containment exemplifies the benefits that can be accrued from national, regional and international collaboration and coordination in plant health management. The country has not only been able to successfully contain the pest but has provided opportunity for other countries to prepare for this devastating pest through simulations exercise and adoption of international best practices in prevention, detection or management to enhance preparedness.

Regional networks geared towards facilitating plant health without borders are also getting traction in the continent. Recently, the East African

Community (EAC) established SPS technical working group to improve the coordination of SPS systems between its Partner States, the specific objective of which is to enhance coordination and response to SPS challenges and crises.

At the continental level, the African Union Inter-African Phytosanitary Council (AU-IAPSC) is instrumental in the coordination of plant health activities among the Member States of the African Union (AU), through collaboration with 54 National Plant Protection Organizations (NPPO), establishing phytosanitary systems and reduced phytosanitary risks. This mandate of the RPPO will become more and more demanding with the coming into effect of the African Continental Free Trade Area (AfCFTA) following its ratification. As a consequence, there will be increased demand for human capacity, technology, infrastructure e.g. diagnostic services and strong partnerships with the Private and international research and development partners.

Aside from AU-IAPSC, other forms of collaboration and partnerships on plant health management operate within the continent. The CGIAR through its centres, together with national, regional, and international partners in the Plant Health Initiative - 2022-2025, aims at strengthening inter-institutional linkages for effective plant health management through improved diagnostics, monitoring and surveillance, prediction and risk assessment of transboundary pests and pathogens, and implementing integrated pest and disease management. Similarly, the Africa Phytosanitary Programme (APP) – brings together 11 countries, IPPC, FAO, AU IAPSC to provide African countries with advanced tools to prevent, detect, and manage significant plant pests and diseases.

At global level, the CABI BioProtection Portal Resources, a free global resource helps users to access information on registered biocontrol and biopesticide products in their countries, thereby promoting environmentally sound management of problematic pests in their crops. The BioProtection Portal Resources is a good example of effective collaboration and partnership between the private and public sector and international organisations.

Although there is a lot of efforts in facilitating collaboration and coordination on plant health management within and between countries, achieving seamless and impactful plant health without borders has been elusive. Differences between regions and countries are evident in a number of areas. Limited harmony in legal and policy frameworks at the regional or international level can create uncertainties and act as barriers to cooperation. Additionally, suboptimal institutional capacities and arrangements leading to poor within-country coordination among different agencies and organizations involved in plant health management limit their ability to participate meaningfully in cross-border activities.

Even though a number of collaborative initiatives and partnerships exists, full achievement of comprehensive international cooperation and coordination on plant health without borders is still constrained by a number of factors including (i) resource constraints, particularly

disparities in technological capabilities among countries and the inability to access essential tools and infrastructure held by the private sector (ii) geopolitical tensions and (iii) fragmentation and inconsistencies in regulatory frameworks between countries and regions for instance in the Bio protection Products testing and registration legal frameworks and procedure (iv) differences in priorities between countries and regions whereby countries may allocate resources focusing on areas that are of greater concern or relevance to their specific contexts, (v) inadequate or lack of information sharing e.g. pest reporting (vi) inadequate momentum in the development of global strategies among others.

Cooperation and Collaboration at regional level is also not optimal. Effective Cross-Border Collaboration Agreements are either non-existent or not fully implemented. Negotiate bilateral or multilateral agreements between countries to promote cooperation on plant health issues therefore needs to be strengthened and given priority. These agreements can include provisions for information sharing, joint research, joint surveillance, technical assistance, and mutual support during outbreaks or emergencies.



Addressing global plant health challenges requires collective action, collaboration, and solidarity among countries, organizations, and stakeholders. Strengthening existing partnerships, fostering new alliances, and mobilizing resources for joint initiatives can enhance resilience and promote universal plant health. This is in addition to fostering collective commitment of stakeholders to work together based on common goals and hinged on inclusive and equitable partnerships that prioritize the well-being of people, plants and the planet. The approach should be multifaceted, involving governments, international organizations, research institutions, NGOs, and other stakeholders. The following are key for successful plant health partnerships going forwards.



- There is need for the global community to recognise the urgent need to address the threats facing our agricultural and natural ecosystems and the fact that plant health is a shared responsibility that transcends borders.
- Need for all stakeholders to prioritize preventive measures, such as early detection, surveillance, risk assessment, and biosecurity measures, to minimize the impact of plant health threats.
- Need for governments to give priority to harmonisation of policy, regulations, and standards related to plant health to promote consistency and coherence in international trade and phytosanitary measures.





INIA-CSIC AND THE IBERO-AMERICAN NATIONAL AGRICULTURAL RESEARCH INSTITUTES NETWORK

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Plant pests have no borders. This vision underscores the interconnected nature of pest-related challenges and emphasizes the importance of international collaboration, information sharing, and coordinated management strategies. This highlights the crucial need for countries and regions to work together and coordinate their actions and research to effectively prevent, monitor, and control plant pests worldwide.

Bringing this ambition to the Latin America and the Caribbean (LAC) Region, the 'Ibero-American INIAS' System' is one of the examples of currently established networks with a valuable potential to extend the research coordination in the phytosanitary area to a global scope.

The National Institute for Agricultural and Food Research and Technology (INIA) is a leading Spanish research performance organization in agri-food and forestry science and technology at national level, whose objective is to support sustainable economic growth and the well-being of society through agricultural and food research and innovation. Since 2021, INIA is part of the Spanish National Research Council (CSIC), the main public research institution in Spain and one of the largest in Europe.

The Ibero-American National Agricultural Research Institutes Network (Sistema de los INIA de Iberoamérica) is a collaborative initiative established in 2003 that involves partnerships between the INIA-CSIC and several agricultural research institutions and organizations across Spanish and Portuguese-speaking countries in Latin America. It gathers 23 institutions from 19 Latin American countries, together with Spain and Portugal. The aim of this network is to foster cooperation, knowledge exchange, and joint research efforts among participating institutions in the region. By sharing expertise, resources, and best practices, the network seeks to address common challenges facing agriculture and food production in Ibero-America, including issues related to plant health, livestock farming, soil and water management, sustainable agriculture, and food safety.

The INIA's Ibero-American Network is closely linked to the Regional Fund for Agricultural Technology (FONTAGRO - Fondo Regional de Tecnología Agropecuaria). FONTAGRO is a unique organization in the region focused on agricultural research and innovation, established as a partnership between governments and international organizations. Its main objective is to promote sustainable agricultural development and enhance food

security in Latin America and the Caribbean through the financing of collaborative research projects. These projects typically focus on addressing key challenges facing agriculture in the region, such as climate change adaptation, natural resource management, crop productivity, and resilience to pests and diseases.

These networks, along with other regional and international platforms and forums, have great potential by collaborating together focusing on plant health challenges towards better coordination in phytosanitary research.



EU CAMPAIGN 'PLANT HEALTH 4 LIFE': MAKING THE LINK BETWEEN PLANT HEALTH AND OUR EVERYDAY LIVES

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Climate change and human activities such as trade and travel put plants under heavy pressure: the spread of plant pests and diseases can have devastating environmental and economic consequences.

Many European citizens still lack sufficient awareness on why plant health matters and as EFSA's social research shows, are very little concerned about risks to plant health.

To reduce this gap, EFSA, the European Commission and our partners in Member States of the European Union as well as in candidate countries launched the #PlantHealth4Life campaign in 2023. The campaign promotes awareness of plant health and its link with our everyday life, highlighting that all citizens have a key role to play to keep plants healthy.

#PlantHealth4Life is a multiannual campaign, based on an in-depth analysis of perceptions and behaviours linked to plant health across the EU. It targets three audience segments: curious travellers, home gardeners and hobby farmers, and conscious young parents.

We are pleased and grateful to launch the second year of the campaign in the framework of the 'Plant Health Without Borders' symposium, hosted by the Belgian Presidency of the Council of the European Union. Keeping plants healthy is a collective responsibility and collaboration is key: EFSA, the EC and Member States work hard together to protect the EU from plant pests and diseases.

This year, the campaign involves 21 Member States and two candidate countries, doubling the reach from the previous year: Belgium, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Malta, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Montenegro, and North Macedonia.

The campaign is carried out via a set of tactics including out-of-home advertising, digital marketing, influencers, fairs and events, activities in schools, and much more. The campaign website offers resources translated in all EU languages - press materials, videos, and social media posts that everyone can share on their channels.

For questions on the #PlantHealth4Life campaign: press@efsa.europa.eu

TESTIMONIES: ADVANTAGES OF INTERNATIONAL COLLABORATION

Experiences of researchers highlight the need and benefits of international research collaboration, as research plays a key role in underpinning plant health policy and in developing scientific expertise and infrastructure in support of plant health and plant protection efforts.



DATA-DRIVEN AND MODEL SUPPORTED SURVEILLANCE OF INVASIVE AND (RE)EMERGING ARTHROPOD PESTS IN BELGIAN AND EUROPEAN FRUIT GROWING

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The expansion of international trade in plant products increases the risk of alien species invasions. As a consequence, several regulated and (re)emerging arthropod pests are threatening fruit crops in Europe including Belgium. They are often not noticed until symptoms of damage become visible and some degree of establishment and spread has already been achieved. To address this with data-based targeted survey actions, recent research has focused on innovative monitoring strategies based on phenological prediction models. For the development and validation of these models, data are exchanged in a context of international collaboration. For instance, in frame of the Euphresco project EPIDISARTH, a phenological prediction model for the brown marmorated stink bug (*Halyomorpha halys*) was developed that, driven by local weather data, can predict the appearance of the different life stages in different regions. Through linking a network of weather stations across several European countries, and a user-friendly web application, this forecasting model can be used for targeted monitoring of *H. halys*. In addition, the online application also contains phenological prediction models for other pests, such as the invasive Asiatic fruit fly *Drosophila suzukii*. In this presentation we provide a live demonstration of how the modelling app is used in practice.



SUPPORTING PLANT HEALTH POLICY WITH SCIENTIFIC EXPERTISE, UNVEILING THE POWER OF INTERNATIONAL COLLABORATION

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The Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), together with the Belgian Federal Public Service (FPS), have been active members of Euphresco since the start of the first ERA-net in 2006 and still fully engaged themselves in EUPHRESKO III, working towards a global phytosanitary network and research collaboration. In this testimony, the ILVO virology lab presents a brief selection of collaborative research initiatives, all funded by the Belgian FPS, aiming to assist the plant health community through transnational project collaboration. By fully committing ourselves in transnational research, rather than working independently and side by side, we optimize resources, avoid duplication and facilitate dissemination of research outputs, thereby focusing on 1) networking to harmonize data on priority topics, 2) looking for scientific evidence in support of PRAs and plant health policy, 3) facilitating access to relevant information.

In this short presentation, the power of international collaboration is demonstrated through three examples. Firstly, the project IVENAD, which is currently still ongoing and involving 25 official partners (from 16 countries) is presented. It aims to find common quality control procedures for nucleic acid extraction used in pest diagnosis and brings together experts working in different parts of the plant health community, focussing broadly on all types of pest and pathogens (insects, nematodes, bacteria, fungi and viruses) as well as on a wide variety of matrices, including environmental samples. It is a perfect example of a broad collaborative network, and huge effort in harmonizing data in view of the production of common guidelines. Secondly, the project PRONC (entitled 'phytosanitary risks of newly introduced exotic tuber crops'), is an example demonstrating a transnational collaboration effort between 7 partners with the common goal to assess the risks involved in introducing novel crops, specifically when dealing with vegetatively propagated material such as ulluco, yacon and sweet potato. When imported in the EU, they might carry pests and pathogens, particularly viruses, of phytosanitary concern to our traditional crops. The consortium explored their presence (status) and went further, looking for scientific evidence through biological characterisation. Finally, the project Valorheights ('Valorization of HTS output data in view of a timely risk assessment of regulated or emerging plant viruses') is briefly introduced as a third example of collaboration (14 partners) highlighting the aim to facilitate access to relevant information in support of an up-to-date prioritisation of regulated or emerging plant viruses, and this to underpin plant health policy.



In conclusion, each of these projects emphasize the importance of transnational collaboration, involving a diverse group of researchers, experts, and stakeholders. The employed methodologies range from making inventories and validation of diagnostic methods over virome scanning through untargeted sequencing to biological characterisation and data sharing initiatives. Furthermore, potential future collaborative initiatives include new proposals aiming to develop an analytical phytosanitary information system (APIS) or the expression of interest to extend the virus biological characterisation efforts with the integration of an economic impact study in support of efficient and reliable pest risk analysis (VIRCOIN). They are examples of a unique interaction between programme makers/owners and researchers which is the key to bring research collaboration in support of plant health policy to a next level.



MALDI-ID PROJECT: FROM HUMAN TO PLANT HEALTH - EVALUATION OF MALDI-TOF TECHNOLOGY FOR PLANT-PATHOGENIC BACTERIA IDENTIFICATION

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The identification of plant-pathogenic bacteria is crucial for plant-health. Indeed, once the pest is identified, it's possible to define the relevant counter measure and to insure the best plant-protection as possible. Numerous techniques exist for plant-pathogenic bacteria identification, completing each other's. Updating these techniques is a necessary step for plant health, insuring their relevance. A relevant technique for plant-pathogenic identification is cheap, fast, easy-to-implement and of course, accurate.

The MALDI-TOF technique (Matrix Assisted Laser Desorption Ionisation/ Time Of Flight) is widely used in the medical field, permitting to rapidly and correctly identify a wide number of pathogens. This technique works by comparing a mass spectrum of the studied microorganisms to a database of reference spectra. The quality and completeness of the database is crucial to achieve correct identification.

This technique has been proved functional for plant-pathogenic bacteria. However, for these bacteria, no coordinated efforts to produce a complete database, neither a general evaluation of the method exist.

Therefore, EUPHRESKO launched an initiative in order to build a MALDI-TOF spectra database for plant-pathogenic bacteria and to evaluate how this method is applicable more widely for plant-health.

In order to achieve these objectives, four European partners (INRAE – France, NIVIP – The Netherland, JKI – Germany, ZHAW – Switzerland) united their different expertise, competences and their complementarity

in order to achieve these results.

Moreover, a key aspect, critical for the success of this project, was the possibility to have access to the biological material of the CIRM-CFBP, the French Collection For Plant-associated Bacteria (<http://cirm-cfbp.fr>), which provided high quality biological material. This collection is in itself the result of more than 50 years of international collaborations.

Finally, this synergy between the partners, permitted to build a database useful for the identification for at least some of the most important plant-pathogenic bacteria, and permitted to better understand the pro and cons of the methods. The database and results are available publicly (<https://doi.org/10.57745/70JNOO>), and a EPPO standard is now being prepared, permitting to share these outcomes with the entire scientific community.



CAPACITY BUILDING IN PLANT HEALTH TO STRENGTHEN RESEARCH IN THE MEDITERRANEAN REGION

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Most pests and diseases affecting Mediterranean crops are seriously compromising food security and, consequently, the sustainability of rural populations in several countries in the Mediterranean region. The United Nations clearly highlighted the importance of plant health with the declaration of 2020 as the International Year of Plant Health and the designation of 12 May as International Day of Plant Health.

CIHEAM Bari has gained more than 35 years of experience in plant health, implementing and supporting numerous international research initiatives in the Mediterranean region and neighbouring countries (e.g., Iran, Sultanate of Oman, Iraq). Research activities mainly concern the development and transfer of advanced detection methods and tools, characterization and epidemiological studies on major and new pests (e.g., Citrus tristeza virus, *Xylella fastidiosa*) affecting priority crops in this region (e.g., citrus, olive). In recent years, CIHEAM Bari has contributed to the development and integration of smart technologies in pest risk analysis, early surveillance and prediction for the implementation of precision Decision Support Systems.

Since 1985, many young researchers have been trained on different aspects of plant health through Master, Master of Science and PhD programs, and scientists have been connected through international cooperation programs to strengthen capacity and awareness on plant health in the Mediterranean region. Developing expertise in plant health to build a research area in the Mediterranean region has been the main

mission of CIHEAM Bari. To this end, about 400 students obtained MSc degrees, with scholarships granted by the Italian Cooperation, conducting original research on phytosanitary issues of great relevance to the Mediterranean region. The main objective is to provide them with knowledge and practical skills on research methods and techniques, and to develop critical and analytical ability. Furthermore, the best students can also complete research started during their MSc thesis activities through PhD programs held in collaboration with Italian and foreign universities. Since 2000, approximately 60 CIHEAM MSc students have obtained a PhD degree (of which 52% are women): 42% come from the Maghreb (Algeria, Tunisia and Morocco), 39% from the Near and Middle East countries (Lebanon, Syria, Jordan, Egypt, Palestine, Iraq), 7% from the Balkans (Albania, Bosnia-Herzegovina) and 12% from EU countries (Italy, Spain). Approximately 290 scientific works have been published in peer-reviewed journals and almost half in scientific conference proceedings, with an average of 0.5 and 1.5 publications per MSc and PhD student, respectively.

These initiatives enabled the development of plant health research capacities for the benefit of national and local scientific and academic institutions in several Mediterranean countries. Furthermore, thanks to the financial support of international cooperation, research facilities and equipment have been provided to research institutions and administrations to allow young scientists to carry out research in their own countries, limiting the so called 'brain drain'. Other cooperation initiatives of CIHEAM Bari concern the harmonization of national regulations with the technical/phytosanitary/legal standards of the EU to safeguard agriculture and promote the improvement of internal and foreign trade of safer foods in compliance with governmental strategies (e.g., PHYTO BiH project: New actions to support the phytosanitary sector in Bosnia and Herzegovina for the harmonization with EU standards).

To build the plant health research area in the Mediterranean region it is essential not only to strengthen research capacities but also collaboration at national and regional levels. To this end, CIHEAM Bari and Euphresco launched in 2021 the first example of research coordination in the region through the 'Phytosanitary research priorities for the Mediterranean region' initiative, whose model inspired the currently ongoing Euphresco III project.



Future challenges and ways to tackle these challenges are highlighted. In this context, the EU Horizon Europe project EUPHRESKO III is presented.



STRENGTHENING PHYTOSANITARY RESEARCH PROGRAMMING AND COLLABORATION: FROM EUROPEAN TO GLOBAL PHYTOSANITARY RESEARCH COORDINATION

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The success of Euphresco as a primarily European network for phytosanitary research coordination has set the ground for discussions on the development of initiative[s] to address the needs of other regions of the world and on global phytosanitary research coordination.

In 2019, during the Meeting of the Agricultural Chief Scientists of the G20 (MACS), the importance 'to strengthen research collaboration to develop effective measures against transboundary pests and to participate in joint funding networks such as Euphresco' was noted. In 2020, the article 'Science diplomacy for plant health', co-authored by experts from the IPPC, several Regional Plant Protection Organizations (RPPOs), NPPOs, research coordination networks and research organizations, highlighted the need for 'a global network for phytosanitary research coordination that can shape research agendas across countries and accelerate the development of science to support regulatory phytosanitary decision makers'. In 2021, the IPPC Strategic Framework 2020-2030 was adopted at the 15th session of the Commission on Phytosanitary Measures (CPM-15). Global phytosanitary research coordination is one of the development programmes identified, and it is expected that by 2030 'possibilities for establishing an international research collaborative structure have been explored and, if appropriate, the structure has been established'.

While Euphresco has been effective in Europe and has attracted non-European members, its current structure and operation limit their full engagement; moreover, there are research areas that are under-represented. A reflection that will consider the global plant health research context in order to clarify the role of Euphresco and to adapt its structure and operation to better serve a wider and more diverse membership was needed. In September 2022, the international workshop 'Shaping global plant health research coordination' was held in London (GB). Representatives of national, regional and international plant health networks attended from around the world. The workshop participants agreed that there is a need for global phytosanitary research coordination to enhance international collaboration and to enable greater efficiency in research investment in plant health.

The presentation will provide an overview on the international development of Euphresco and on a newly funded project that will allow to set the foundations for global phytosanitary research coordination.

PHYTOSANITARY MEASURE - GUARANTEE OF FOOD SAFETY



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According to the FAO, up to 70% of the crop can be lost if the crops on earth are not protected from harmful organisms. Even with the use of new technologies and methods available today, 20-40% of the harvested crop will be destroyed, which will amount to a total of 290 billion dollars. In addition, for every 1 degree change in climate, 10-25% of productivity will be lost due to pests and diseases. Today, despite the strengthening of phytosanitary measures, the use of new plant protection tools and technologies, it is not possible to fully protect any crop from harmful organisms.

The world is developing rapidly, import and export processes between countries are accelerating, and the spread of harmful organisms to other new areas is increasing. Today, the increase in the number of people on earth is causing a number of problems aimed at providing them with food. True, a number of great works are being carried out in this regard, but it remains powerless in the face of the observed threat of food shortages and its consequences.

In order to fight against pests and diseases, various chemical pesticides are used by farmers in order to save crops, and in addition to the damage they cause in the fields of environmental pollution, fishing, beekeeping and cocooning, on average every year 5,000 people die from pesticide poisoning.

In addition, the introduction of quarantine organisms that are not specific to other areas into new areas makes such situations even more difficult.

Such problems can only be solved by scientific research and innovative developments and the creation of technologies.

The fact that up to 85% of biological means are used to protect cotton and grain fields from pests in Uzbekistan is considered the result of scientific and practical projects in the field and requires further acceleration of these studies. However, the level of use of biological means in fruit growing and vegetable growing remains low.

Therefore, it is necessary today for scientists of the whole world to come together and work on new tools and methods to increase the effectiveness of phytosanitary measures, and to create new technologies. Such

international conferences are important in discussing existing problems and finding solutions to them.

If we do not accelerate research and work on new technologies today, we may face food shortages, unemployment, and economic crisis.

For this reason, it is necessary to create innovative technologies of phytosanitary measures during import and export of agricultural products.

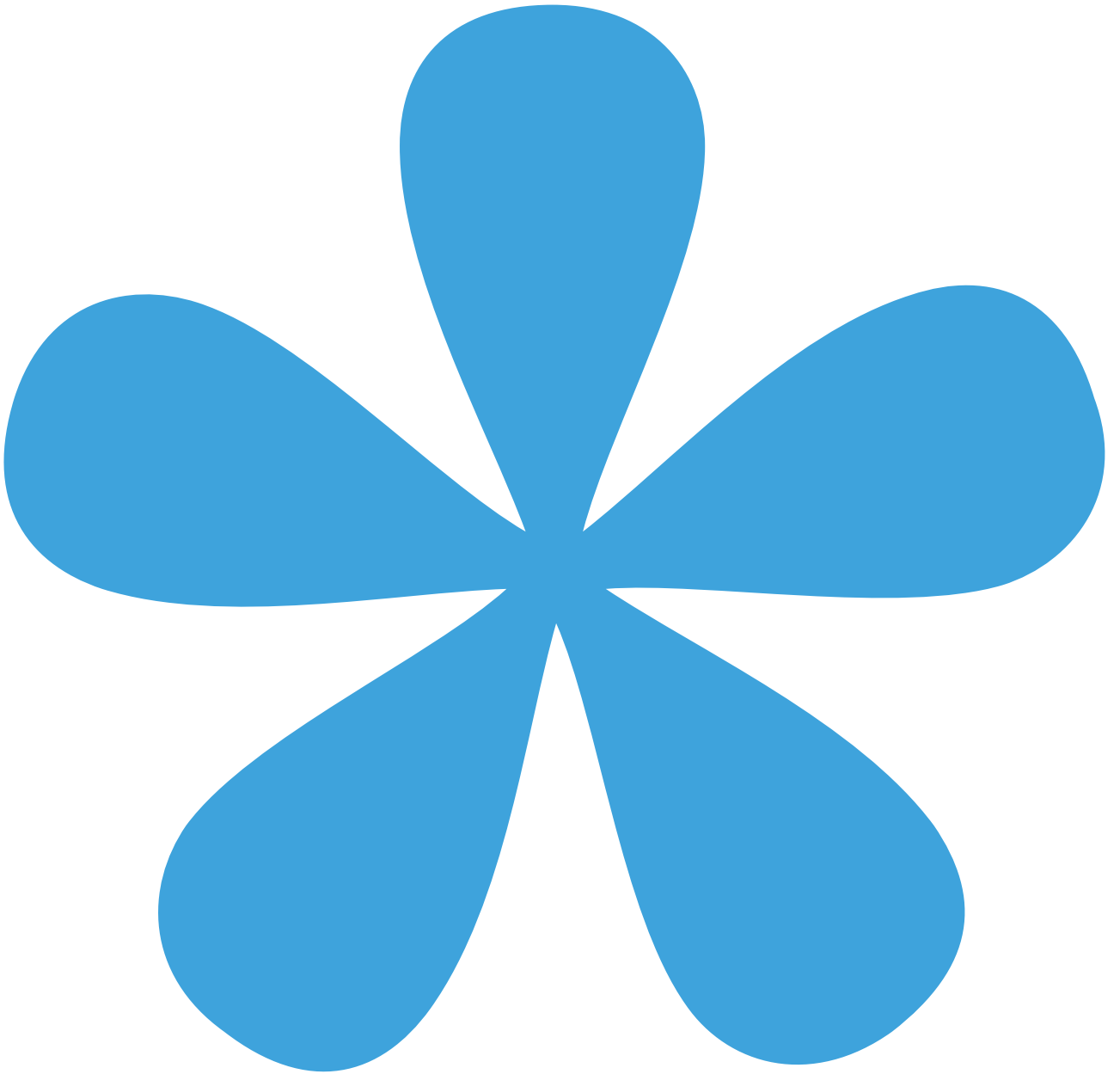
Complete digitization of plant protection, implementation of the latest technologies in plant health monitoring and protection against harmful organisms.

Strengthening scientific cooperation between scientific research institutes on intercontinental, world-wide main problem of harmful organisms of plants, establishment of new laboratories; it is urgent to fulfill tasks such as reducing the use of pesticides on plants and widely introducing the use of biological agents in agriculture.

FINAL CONCLUSIONS

The Federal Public Service Health, Food Chain Safety, and Environment reflects on a hybrid gathering of individuals and organizations who share a belief in nurturing plant health, recognizing it as a key driver of both human and planetary health.

This event, organised by the Belgian EU Presidency in collaboration with the EUPHRESKO III project consortium, has highlighted the needs and benefits of national, regional, and international collaboration in plant health policy and research. Examples of existing networks in the area of plant health and of successful international research collaborations were presented. To tackle future challenges, this event was the perfect opportunity to debate on future needs and opportunities to further expand international cooperation and break down barriers on different scales.



ACKNOWLEDGEMENTS

The Contractual Research Unit of the FPS Health extends its sincere and heartfelt appreciation to everyone who made the symposium 'Plant Health Without Borders' possible.

A special thank you goes to the Deputy Prime Minister and Minister for Agriculture of Belgium for graciously opening the symposium, and to all the speakers for sharing their insights and experiences regarding international collaboration to underpin plant health policy.

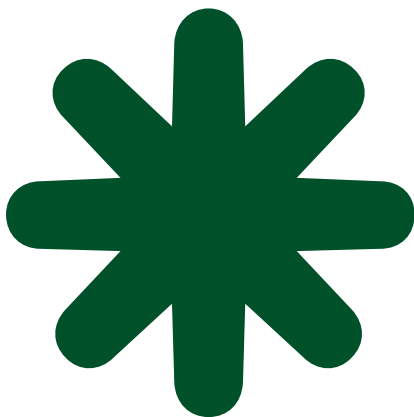
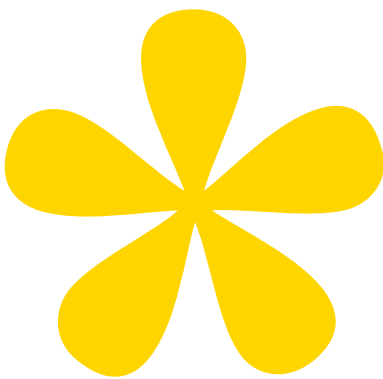
We are grateful to the Belgian Presidency Team for the smooth organisation and to the Euphresco Network Office and the plant health experts of the FPS Health for their valuable contributions.

Our thanks also extend to the Belgian Institute of Natural Sciences for providing us with the perfect location to host the symposium and to Kwin for creating a look and feel for the event seamlessly aligns with its underlying philosophy.

We would also like to acknowledge the assistance of the Management Office Team of the FPS Health Directorate General Animals, Plants, and Food.

Finally, we thank all participants on-site as well as online for their active contribution.

Let us continue to cross borders and build strong global networks to underpin plant health policy at national, regional, and international level.



#PLANTHEALTHWITHOUTBORDERS

