

VIRTUAL MOBILITY (VM) GRANT REPORT

This report is submitted by the VM grantee to VNS Manager, who will coordinate the approval on behalf of the Action MC.

Action number: CA16107

VM grant title: Assess the opportunity and define the scope and structure for a future COST action

VM grant start and end date: 23/08/2021 to 14/09/2021

Grantee name: Dr Jaime Cubero Dabrio

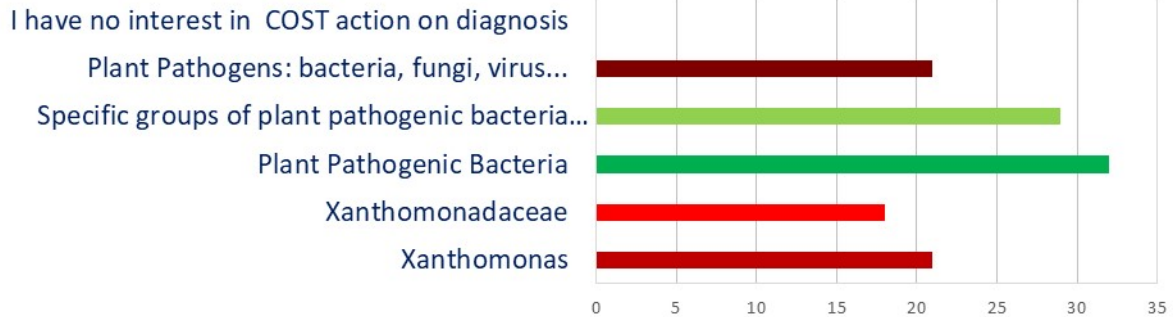
Description of the outcomes and achieved outputs (including any specific Action objective and deliverables, or publications resulting from the Virtual Mobility).

The key goal of the COST Innovator Grant (CIG) proposal “X-diag: New strategies for disease diagnosis of plant-pathogenic xanthomonads based on genomics-informed targets innovation” was developed under EuroXanth COST Action to evaluate existing and to develop new strategies for xanthomonads detection. In the current Virtual Mobility Exchange action (VM) we have evaluated the opportunity that this CIG could constitute a baseline for a future COST Action and in parallel define the first step on its scope and structure.

The VM was first presented in the online MC meeting of August 2021 where its goal was defined and putative planned activities were shown. Among those activities a main one was a meeting with the Action Chair and Vice-Chair, the four Working Group (WG) Leaders, and the Innovation Grant authors to establish an starting point for such future COST Action on diagnosis. This meeting that took place on September 13th was addressed to collect ideas and suggestions resulting as described below.

In the meantime, a first survey performed by the Virtual Networking Support Manager showed that a proposal about a COST Action on diagnosis received a lot of interest by many MC Members of EuroXanth. In a second survey conducted through September within VM, MC Members and Substitutes were asked about the possible scope of the putative new COST Action and about their possible participation. The different options involved from different pathogens in addition to bacteria, plant pathogenic bacteria in general or specific groups of them, or just Xanthomonadaceae family or xanthomonads bacteria, in the proposal.

Survey Future COST ACTION on diagnosis



Most of the participants in the poll expressed their positive opinion about a COST Action proposal that will include plant pathogenic bacteria in general or specific groups of them.

The meeting on September 13th took place online, chaired by Jaime Cubero and attended by fourteen people including two representatives from EFSA and EPPO that were previously contacted and consulted about the possible interest of both organizations in a COST Action of these characteristics.

During a brief presentation, Jaime explained first ideas on this putative proposal highlighting that COST Actions are not research projects but provide funds to promote global networking of national-funded research. The presentation also showed different possibilities of scope, activities, working groups etc. Then a discussion on the scope of the Action was opened giving as result a consensus about the need to broaden the scope of EuroXanth in this new initiative, expanding to new groups of bacteria that will be defined according opinions and needs encountered by the participant researchers, as well as institutions like EFSA, EPPO, EURLs, NPPOs, etc during the proposal elaboration.

Once the general scope was set, a discussion was initiated about the working groups (WGs) and what should be included in such WGs. It was finally decided that WGs should not be defined according to bacterial groups but on the basis of different areas of the newnetwork, for example, genomic/bioinformatic tools, sampling protocols, regulatory issues, lab accreditation, etc. Several other topics were discussed during the meeting and resulted in an agreement about the use of conserved and virulence loci as targets for pathogen identification, the convenience of multilocus approaches and the future use of NGS technologies to obtain a general view of the microbiota in a sample for multipathogen approaches. Moreover, other topics like those regarding the detection in seeds or the specific detection of viable bacteria were also deliberated and suggested as essentials in a proposal like this.

At the end of the meeting Jaime volunteered to write a draft document about possible WGs and topics included in each one as an starting point of the new COST proposal. This document will be circulated among the participants in order to prepare a later distribution to other research groups and organizations.



Some of the participants in the online meeting

Description of the benefits to the COST Action Strategy (what and how).

Early, rapid and accurate pathogen detection, identification and characterization are essential keys for efficient and sustainable disease management and specially to avoid pathogen introduction and spread and must be considered a main step in plant disease control.

Within the activities of the EuroXanth COST Action, opportunities and challenges for future COST Actions were identified and used for a CIG proposal addressed to improve detection protocols in Xanthomonadaceae family. This goal was going to be achieved by integrating data and resources from ongoing projects of the EuroXanth COST Action and beyond and their enrichment with new technologies for nucleic acid amplification, detection and sequencing in combination with bioinformatic processing of genomic information

The VM here, opened the doors to go ahead for new initiatives beyond EuroXanth that will help not only to the dissemination of all information assembled during this COST Action and therefore contribute to the action strategy, but also allowing to keep and expand an excellent research networking, prioritizing Early Career Investigator (ECI) participation in order to acquire new skills and to help in their career. Moreover, results of this VM initiative will foster the implementation of the COST Excellence and Inclusiveness Policy, especially towards the support of researchers in COST Inclusiveness Target Countries (ITC) that will be invited to engage in leadership roles in the new COST Action.

Finally, this activity established contacts to researchers and stakeholders that are relevant for the future COST Action, such as the European and Mediterranean Plant Protection Organization (EPPO), European Reference Laboratory for Pests on Plants and the European Food Safety Authority (EFSA), European Union Reference Laboratory (EURL) for plant pathogenic bacteria and National Plant Protection Organizations (NPPOs).

Description of the virtual collaboration (including constructive reflection on activities undertaken, identified successful practices and lessons learned).

Collaboration among COST Action EuroXanth members who participated either in the meetings or the surveys within this VM triggered useful and valuable discussions among researchers with recognized expertise in plant pathogenic bacteria and in different areas of pathogen detection, identification and characterization, as well as knowhow in different methodologies and technologies.

Several researchers from twenty one countries encompassing COST and ITC countries, according to the surveys performed within the VM, showed their interest and are willing to participate in a new COST proposal as well as recognized organizations, like EFSA and EPPO, revealed of critical importance on the field of this future COST activity that were continuously consulted within this VM.

This VM has taken advantage of the outstanding network created in EuroXanth and allow not just to keep an excellent scientific community but to raise and extend it by incorporating new researchers that may provide knowledge on bacterial groups different to xanthomonads as well as emerging technologies to be applied in diagnosis. In addition, this new action will give the opportunity to the participation of Early Career Investigators (ECI) that will be contacted in the next steps of the proposal construction. Furthermore, after these initial discussions within the VM, new topics have been identified as important subjects for the COST Action proposal. Among these new subjects, bacterial detection in seeds, the improvement of sampling methods or the need to apply multilocus approaches or even multipathogen methods were identified in the last meeting in September.

The VM therefore has assisted to create the basis of a new COST Action proposal on diagnosis that will include the most important aspects on bacterial detection and most recent advances in the area by the inputs from researchers and essential organizations.

This collaboration among researchers coming from the EuroXanth network, that is the basis of this VM, allowed to define the settings of a future activity that with no doubts will contribute to improve plant health and plant disease management in Europe and beyond.