



## SATELLITE EVENT: HIGH-THROUGHPUT SEQUENCING IN PLANT VIROLOGY: FROM DISCOVERY TO DIAGNOSTICS (Sunday, 20 August 2023 – all day)

### Event organizers:

Maja Ravnikar – National Institute of Biology (NIB), Ljubljana, Slovenia  
Denis Kutnjak – National Institute of Biology (NIB), Ljubljana, Slovenia  
Baldissera Giovani – EPPO/Euphresco, Paris, France  
Adrian Fox – Fera Science Ltd., York, United Kingdom  
Marleen Botermans – National Plant Protection Organization of the Netherlands (NVWA), Wageningen, the Netherlands  
Carla Oplaat – National Plant Protection Organization of the Netherlands (NVWA), Wageningen, the Netherlands  
Dimitre Mollov – USDA ARS Horticultural Crops Disease and Pest Management Research Unit, United States of America

Venue: LYON CONVENTION CENTRE  
Room: Rhone 2



High-throughput sequencing (HTS) technologies have revolutionized plant virus research and diagnostics by accelerating the discovery of new viruses and by providing a sensitive untargeted approach for the detection of viruses. The latter, together with high data-generation potential of HTS, enables discovery of new and emerging viruses from diverse hosts, archived or ancient samples, and untargeted virus detection in diverse matrices, as well as research on a broad range of topics, such as plant virus epidemiology, diversity, and evolution. Many new plant virus discoveries, increased availability of sequence data, and a lagging biological characterization of HTS-based findings call for a broad consideration on harmonization of sequencing and data analysis approaches, as well as the interpretation of the results from the scientific and regulatory perspective. During this satellite meeting, different aspects of applying HTS in plant virology will be addressed and discussed. Topics will include: discovery and detection of new and emerging viruses; virus diversity, epidemiology, and evolution studies; development of virus detection and identification protocols and validation of HTS-based tests for plant virus diagnostics.

**Session I (09:00-11:45) [Chaired by Carla Oplaat and Denis Kutnjak]**

09:00-09:15	Welcome address
09:15-09:35	<i>François Maclot</i> : WHAT CAN VIRAL METAGENOMICS BRING TO OUR UNDERSTANDING OF THE DIVERSITY AND ECOLOGY OF PLANT VIRUSES IN AGRO-ECOLOGICAL LANDSCAPES?
09:35-09:55	<i>Maja Ravnika</i> r: ADVANCES IN HIGH-THROUGHPUT SEQUENCING GIVE NEW OPPORTUNITIES IN DISCOVERY, DIAGNOSTICS AND BIOLOGY OF PLANT VIROMES; RESULTS GENERATED WITHIN INEXTVIR PROJECT
09:55-10:10	<i>Peter van Dam</i> : FULL-LENGTH SEQUENCING OF CONCATENATED CIRCULAR DNA VIRUS GENOMES USING ROLLING CIRCLE AMPLIFICATION AND OXFORD NANOPORE SEQUENCING
10:10-10:25	<i>Maria Mariduena-Zavala</i> : TRANSCRIPTOMIC AND BISULFITE SEQUENCING IN PAPAYA PLANTS INFECTED WITH BABACO MOSAIC VIRUS (BABMV)

Coffee break with poster viewing (10:25 – 11:15)



11:15-11:30	<i>Stephan Winter</i> : AUTOMATED AND REAL-TIME PROFILING OF PLANT VIRUS INFECTIONS TO SUPPORT DIAGNOSTICS AND QUICK RESPONSE IN OUTBREAK EVENTS
11:30-11:45	<i>Annelies Haegeman</i> : REVISITING HIGH THROUGHPUT SEQUENCING DATA USED FOR PLANT VIRUS DETECTION IN ORDER TO FIND EVIDENCE OF NON-VIRAL PLANT PATHOGENS AND PESTS

**Session II (11:45-14:45) [Chaired by Maja Ravnika**r and Dimitre Mollov]

11:45-12:05	<i>Yazmin Rivera</i> : TOWARDS THE INCORPORATION OF HTS IN THE CONFIRMATORY DIAGNOSTICS PROCESS FOR QUARANTINE PLANT VIRUSES IN THE US
12:05-12:25	<i>Maher Al Rwahnih</i> : USE OF HIGH THROUGHPUT SEQUENCING FOR PLANT MATERIAL CERTIFICATION AND RELEASE OF QUARANTINED PROPAGATIVE PLANT MATERIAL AT FOUNDATION PLANT SERVICES IN DAVIS, CALIFORNIA, USA

Lunch break (lunch boxes) with poster viewing (12:25 – 13:30)



13:30-13:45	<i>Pier de Koning</i> : VALIDATION OF A HIGH THROUGHPUT SEQUENCING TEST WITHIN AN ISO17025 ACCREDITED PLANT HEALTH LABORATORY
13:45-14:00	<i>Michael Rott</i> : APPLICATION OF HIGH THROUGHPUT SEQUENCING METHODS FOR A GRAPEVINE IMPORT, EXPORT AND DOMESTIC CLEAN PLANT PROGRAMS IN CANADA
14:00-14:15	<i>Nataša Mehle</i> : NANOPORE SEQUENCING FOR THE ANALYSIS OF OFFICIAL SAMPLES FOR THE PRESENCE OF (QUARANTINE) PLANT VIRUSES
14:15-14:30	<i>Julie Pattemore</i> : HIGH THROUGHPUT SEQUENCING: RESEARCH TO REALITY – THE AUSTRALIAN POST ENTRY QUARANTINE JOURNEY
14:30-14:45	<i>Hans Maree</i> : APPLICATION OF HIGH-THROUGHPUT SEQUENCING (HTS) FOR ROUTINE PLANT VIRUS DETECTION IN THE SOUTH AFRICAN CITRUS IMPROVEMENT SCHEME

Short comfort break (14:45 - 15:00)



**Session III (Introductory talks, followed by panel discussion) (15:00-17:30) [Chaired by Marleen Botermans, Adrian Fox and Baldissera Giovani]**

15:00-15:15	<i>Adrian Fox</i> : AN INTRODUCTION TO THE COMMUNITY NETWORK IN PLANT VIROLOGY
15:15-15:30	<i>Françoise Petter</i> : THE OUTLOOK FOR HTS IN REGULATORY APPLICATIONS
15:30-15:45	<i>Dimitre Mollov</i> : THE ADDED VALUE OF PREPUBLICATION HTS DATA SHARING FOR THE DISCOVERY AND CHARACTERIZATION OF A NEW POTATO TORRADOVIRUS
15:45-16:00	<i>Baldissera Giovani</i> : BRAINSTORMING ON RESEARCH PROJECT IDEAS FOR INTERNATIONAL COLLABORATION

Coffee break (16:00-16:30)



16:30-17:15	Panel discussion on regulatory aspects, collaborations among virologists, new topics
17:15-17:30	Wrap up