

# PlantBioRes 2023

ICPP Satellite Symposium

19-20 August 2023 – Lyon, France

## Program



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## Organizing networks

French Society for Phytopathology  
RMT Bestim (stimulating plant health in agroecological systems)  
Biocontrol consortium  
Institut Carnot Plant2Pro®  
Ecological Management of BioAgressors (EMBA) network  
Impact of ENvironment on plant immunity and pathogen VirulencE (ENVIE) network

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JOINT TECHNOLOGY NETWORK - RMT BESTIM  
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# Program

**Venue:** Lyon Convention Centre – Room Rhone 3  
50, Quai Charles de Gaulle, Lyon, France

## Saturday August 19<sup>th</sup> 2023 (Day 1)

08:00 – 09:15 **Welcoming – Registration – Poster hanging**

09:15 – 09:25 **Introduction** (Olivier LEMAIRE, Colmar, FRANCE & Ali SIAH, Lille, FRANCE)

09:25 – 10:00 (inaugural keynote)

**NEIGHBOR MEDIATED SUSCEPTIBILITY, TOWARDS AN ECOLOGICAL VIEW OF PLANT IMMUNITY**  
Elsa BALLINI, Montpellier, FRANCE

**Session 1: Cross-protection: mild strains as a promising biocontrol tool of plant diseases**

*Chairpersons: Anne SICARD (Colmar, FRANCE) & Heiko ZEBEL (Braunschweig, GERMANY)*

10:00 – 10:30 (keynote)

**CROSS-PROTECTION: MILD STRAINS AS A PROMISING BIOCONTROL TOOL OF PLANT DISEASES**  
Heiko ZIEBELL, Braunschweig, GERMANY

10:30 – 11:00 **Coffee break**

11:00 – 11:15

**CROSS-PROTECTION IN PLANT VIRUSES: HOW CLOSELY RELATED DO PROTECTING AND CHALLENGING VIRUSES NEED TO BE?**

Anne SICARD, Colmar, FRANCE

11:15 – 11:30

**A NEW APPROACH FOR THE DESIGN OF CROSS-PROTECTION TRIAL IN THE FIELD**

Pierre MUSTIN, Colmar, FRANCE

11:30– 11:45

**EVIDENCE OF CROSS-PROTECTION BETWEEN GEMINIVIRUSES IN TOMATO AND THE ESCAPE PHENOTYPE OF THE INVASIVE RECOMBINANT TOMATO YELLOW LEAF CURL VIRUS-IS76**

Michel PETERSCHMITT, Montpellier, FRANCE

11:45 – 12:00

**LESSONS FROM VIRUSES: HOW TO INDUCE RESISTANCE TO INSECT PESTS**

John CARR, Cambridge, UNITED KINGDOM

12:00 – 12:30 **1<sup>st</sup> Poster session**

12:30 – 13:30 **Lunch**



## Session 2: Beneficial microbes and microbiome as natural boosters of plant immunity

**Chairpersons** : Claire PRIGENT-COMBARET (Villeurbanne, FRANCE) & Monica HÖFTE (Gent, BELGIUM)

13:30 – 14:00 (keynote)

### BIOSURFACTANT-PRODUCING BACTERIA AS RESISTANCE-INDUCERS IN PLANTS

Monica HÖFTE, Gent, BELGIUM

14:00 – 14:15

### SELECTION BY PLANT OF PLANT-PROTECTING *PSEUDOMONAS* POPULATIONS EVIDENCED VIA AN EXPERIMENTAL EVOLUTION APPROACH

Claire PRIGENT-COMBARET, Villeurbanne, FRANCE

14:15 – 14:30

### *PSEUDOZYMA APHIDIS* SUPPRESSES MAMP-TRIGGERED IMMUNITY AND ACTIVATES LOCAL AND SYSTEMIC INDUCED RESISTANCE

Maggie LEVY, Rehovot, ISRAEL

14:30 – 14:45

### IDENTIFICATION OF A *STREPTOMYCES* NECROTIC ELICITOR INVOLVED IN ANTIFUNGAL ACTIVITY, PLANT DEFENSE STIMULATION AND BACTERIA FITNESS IN THE RHIZOSPHERE

Clément NICOLLE, Auzeville-Tolosane, FRANCE

14:45 – 15:00

### COMBINATION OF AN ARBUSCULAR MYCORRHIZAL FUNGUS AND A TREHALOSE TREATMENT TO CONTROL POWDERY MILDEW IN WHEAT

Maryline MAGNIN-ROBERT, Calais, FRANCE

15:00 – 15:15

### THE USE OF NATURAL BIOSTIMULANTS APPLIED BY SEED COATING ON WHEAT TO IMPROVE TOLERANCE AGAINST FUNGAL PATHOGENS

Walid HAMADA, Tunis TUNISIA

15:15 – 16:00 2<sup>nd</sup> Poster session

16:00 – 16:30 Coffee break

## Session 3: Natural and biosourced substances inducing plant resistance

**Chairpersons** : Marc BARDIN (Avignon, FRANCE) & Jean-Philippe COMBIER (Auzeville-Tolosane, FRANCE)

16:30 – 17:00 (keynote)

### COMPLEMENTARY PEPTIDES REPRESENT A CREDIBLE ALTERNATIVE TO AGROCHEMICALS BY ACTIVATING TRANSLATION OF TARGETED PROTEINS

Jean-Philippe COMBIER, Auzeville-Tolosane, FRANCE

17:00 – 17:15

**APPLICATION OF RNA-BASED BIOPROTECTANTS AGAINST VIRUSES FOR SUSTAINABLE CROP PRODUCTION IN A CHANGING CLIMATE**

Ana SEDE, Strasbourg, FRANCE

17:15 – 17:30

**DEHYDROASCORBATE INDUCES RESISTANCE AGAINST ROOT-KNOT NEMATODES IN THE SAME AND A SUBSEQUENT RICE GENERATION**

Tina KYNDT, Gent, BELGIUM

17:30 – 17:45

**THE *BACILLUS SUBTILIS* LIPOPEPTIDE MYCOSUBTILIN PRIMES DEFENSE MECHANISMS IN WHEAT TOWARDS *ZYMOSEPTORIA TRITICI***

Rémi PLATEL, Lille, FRANCE

17:45 – 18:00

**ULVANS INDUCE RESISTANCE IN WHEAT AGAINST FUNGAL LEAF DISEASES**

Marciel STADNIK, Florianópolis, BRAZIL

18:00 – 18:15

**CHITOSAN: A COMPLEX SUBSTANCE WITH GREAT POTENTIAL FOR GLOBAL INTEGRATED PEST MANAGEMENT AND FOR REDUCING FARMERS' DEPENDENCE ON SYNTHETIC FUNGICIDES**

Ophélie DUBREU, Beaucouzé, FRANCE

20:00 – 23:30 Gala Dinner at Brasserie Georges (address: 30 Cours Verdun, LYON, France)

## Sunday August 20<sup>th</sup> 2023 (Day 2)

### Session 4: Methodological tools and molecular biomarkers of plant induced resistance

**Chairpersons:** *Marc ONGENA (Gembloux, BELGIUM) & Roeland BERENDSEN (Utrecht, NETHERLANDS)*

09:15 – 09:45 (keynote)

**CONSERVED DOWNY MILDEW-ASSOCIATED MICROBIOMES REDUCE PLANT DISEASE AND FUNCTION AS TRANSFERABLE RESISTOBIOMES**

Roeland BERENDSEN, Utrecht, NETHERLANDS

09:45 – 10:00

**DESIGN AND APPLICATION OF A PLANT-IMMUNE BIOSENSOR FOR SCREENING AND DISCOVERY OF BIOCONTROL AGENTS AGAINST NECROTROPHIC FUNGAL PATHOGENS**

Louise THATCHER, Acton, AUSTRALIA

10:00 – 10:15

**ACTIVATION OF SEED DEFENSES THROUGH DEFENSE PRIMING**

Jerome VERDIER, Beaucouzé, FRANCE

10:15 – 10:30

**STUDYING PATTERN-TRIGGERED IMMUNITY (PTI) AT THE METABOLOMIC LEVEL:  
IMPLICATIONS FOR THE IMPROVEMENT OF PLANT ELICITOR EFFICACY IN THE FIELD**  
Eric NGUEMA-ONA, Saint-Malo, FRANCE

10:30 – 11:00 **Coffee break**

**Session 5: Environmental factors and field implementation of plant induced immunity**

**Chairpersons:** *Elsa BALLINI (Montpellier, FRANCE) & Kenichi TSUDA (Wuhan, CHINA)*

11:00 – 11:30 (keynote)

**THE ROLE OF DEFENSE PHYTOHORMONES IN INTERACTIONS WITH ENVIRONMENTS**  
Kenichi TSUDA, Wuhan, CHINA

11:30 – 12:00 (keynote)

**FACILITATING THE LAB-TO-FIELD TRANSACTION OF AGRICULTURAL BIOLOGICALS**  
Erik ALEXANDERSSON, Lomma, SWEDEN

12:00 – 12:15

**PLANT-PLANT INTERACTIONS MODULATE WHEAT SUSCEPTIBILITY TO SEPTORIA**  
Laura MATHIEU, Montpellier, FRANCE

12:15 – 12:30

**IMMUNITY PRIMING UNCOUPLES THE GROWTH-DEFENSE TRADEOFF IN TOMATO**  
Maya BAR, Rishon LeZion, ISRAEL

12:30 – 12:45

**ENHANCING SOIL PHOSPHORUS AVAILABILITY AND WHEAT IMMUNITY AGAINST  
ZYMOSEPTORIA TRITICI USING THE PSEUDOMONAS SIDEROPHORE ISOPYOVERDINE**  
Félicie GOUDOT, Lille, FRANCE

12:45 – 12:50 **Closing remarks** (Olivier LEMAIRE, Colmar, FRANCE & Ali SIAH, Lille, FRANCE)

12:50 – 13:30 **Lunch box**

13:30 – 18:00 **Field trip (Beaujolais experimental vineyard platform – Wine and Cheese break)**

## Posters

P1

**INDUCTION OF RESISTANCE BY *PANTOEA ANANATIS* AND PERCEPTION OF GLYCOLIPIDS IN TOMATO**

Cédric JACQUARD, Reims, FRANCE

P2

**GRAPEVINE DECLINE DUE TO THE 161-49 C ROOTSTOCK SEEN AS A DYSFUNCTION OF THE ROOT HOLOBIONT**

Sophie TROUVELOT, Dijon, FRANCE

P3

**GRAPEVINE BIOSTIMULATION: A LEVER TO PRIME LEAF ELICITOR-INDUCED RESISTANCE TO DOWNY MILDEW**

Sophie TROUVELOT, Dijon, FRANCE

P4

**SYMBIOTIC COMPATIBILITY BETWEEN *ORYZA SATIVA* AND ARBUSCULAR MYCORRHIZAL FUNGI GENOTYPES IMPACTS RICE'S GROWTH AND MYCORRHIZA-INDUCED RESISTANCE AGAINST *XANTHOMONAS ORYZAE* PV. *ORYZAE***

Ludivine GUIGARD, Montpellier, FRANCE

P5

**CHITOSAN REDUCES STOMATAL PENETRATION AND PATHOGEN CELL-WALL DEGRADING ENZYMES PRODUCTION, AND INDUCES DEFENSE MECHANISMS IN BOTH BREAD AND DURUM WHEATS INFECTED BY *ZYMOSEPTORIA TRITICI***

Maryline MAGNIN-ROBERT, Calais, FRANCE

P6

**RESISTANCE IN WHEAT AGAINST *ZYMOSEPTORIA TRITICI* INDUCED BY ULVAN REQUIRES THE FLAVONOID TRICIN**

Marciel STADNIK, Florianópolis, BRAZIL

P7

**POTENTIAL OF DUCKWEED EXTRACTS TO CONTROL THE ANTHRACNOSE AND STIMULATE GROWTH OF BEAN PLANTS**

Marciel STADNIK, Florianópolis, BRAZIL

P8

**STRUCTURE-ACTIVITY OF THE LIPOPEPTIDE SURFACTIN AS ELICITOR OF PLANT IMMUNITY**

Ning DING, Gembloux, BELGIUM

P9

**THE ROLE OF PLANT VOLATILES IN ACTIVATING NATURAL DEFENSES AGAINST HLB AND ITS VECTORS**

Meritxell PEREZ-HEDO, Moncada, SPAIN



P10

**NEW BIO-SOURCED ELICITORS FROM A SUGAR BEET BYPRODUCT INDUCE RESISTANCE IN WHEAT AGAINST *ZYMOSEPTORIA TRITICI***

Ali SIAH, Lille, FRANCE

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**INDUCTION OF PLANT DEFENCE AGAINST *MYCOSPHAERELLA* IN CUCUMBER**

Esmée DE GRAAF, Bleiswijk, NETHERLAND

P12

**IDENTIFICATION OF COMMON FUNGAL EXTRACELLULAR MEMBRANE (CFEM) PROTEINS IN *FUSARIUM SACCHARI* THAT INHIBIT PLANT IMMUNITY AND CONTRIBUTE TO VIRULENCE**

Wei YAO, Nanning, CHINA

P13

**HYPERSPETRAL IMAGING AS A PROMISING TOOL FOR PLANT IMMUNITY ASSESSMENT**

Djida AYAD, Brest, FRANCE

P14

**IDENTIFICATION OF RESISTANCE LOCI FOR FOLIAR DISEASES IN THE COMMON WHEAT LINE 'KIJIL'**

Shanshan YAN, Wuhan, CHINA

P15

**ESSENTIAL OILS AS POTENTIAL ALTERNATIVE BIOCONTROL PRODUCTS AGAINST FUNGAL PLANT PATHOGENS AND WEEDS**

Anissa LOUNES-HADJ SAHRAOUI, Calais, FRANCE

P16

**RMT BESTIM: A JOINT TECHNOLOGY NETWORK FOR PROMOTING AGROECOLOGICAL IMMUNITY AND PLANT HEALTH**

Régis BERTHELOT, Boigneville, FRANCE