IUPAC 2019 GHENT

# CROP PROTECTION CHEMISTRY

## CROP PROTECTION: EDUCATION OF THE FUTURE GENERATION


May 19 - 24, 2019

# FINAL PROGRAMME

IUPAC 2019 GHENT

European Crop Protection

GHENT UNIVERSITY

ISCP
71st INTERNATIONAL SYMPOSIUM ON CROP PROTECTION


www.iupac2019.be



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## IUPAC 2019 Chairs

### Chair

Prof. Dr. ir. Pieter Spanoghe
Head of Research Group Crop Protection Chemistry
Ghent University (UGent), Belgium

### Co-chair

Dr. Nathan De Geyter
Strategic Relations Manager
Ghent University (UGent), Belgium

FACULTY OF BIOSCIENCE ENGINEERING

GHENT UNIVERSITY

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## Welcome to IUPAC 2019

Dear attendee,

Welcome to Ghent! Have you ever heard of a bucket list? Do you have a list of key things to experience or do before you die? Do you desire to travel the world, to write a book, to find love, to meet or become a famous person or to see world heritage sites? For example, is seeing the most coveted painting in the world on your list? You can actually see the restauration of Van Eyck's 15th century altarpiece 'The Adoration of the Mystic Lamb' in the Museum of Fine Arts Ghent adjacent to this congress venue.

Since the start of my scientific career, I have attended several IUPAC Crop Protection congresses. I have always been very impressed with the sheer size, the scientific level of excellence and the logistics of organising such an international event. After my first visit, I thought that organising one edition myself at Ghent University, would help me in realizing many of my personal dreams. Now, this dream has become reality and I am able to welcome you all to this event that aims to highlight the fascinating world of crop health! Moreover, with this IUPAC congress, we also try to give you the ideal opportunity to cross some things off your bucket list!

This week, you will feel part of a global Crop Protection community. For more than 60 years, crop health experts have been sharing their expertise and discussing emerging issues of global significance in agriculture. For the first time ever, the 14th International IUPAC Congress on Crop Protection is a conjoined event with the European Crop Protection Association (ECPA) regulatory congress and the International Symposium on Crop Protection (ISCP). This illustrates the aim and need to facilitate a better exchange and more collaboration across various disciplines and between different actors.

As host, we at Ghent University want to make this congress as impactful as possible. You are with more than 1,500 helping us to achieve this goal. Amongst us we have world-renowned speakers, next-generation participants, academics, experts from industry, policymakers, students and many others. We aim to give you the opportunity to broaden your network and to reach out to your fellow international crop health experts.

The overall congress theme is "Crop Protection: Education of the Future Generation". We are proud that we realized our Next Gen programme and we invite you all to inspire, educate and collaborate with this next generation of crop health scientists and professionals.

Nathan and I wish you an exciting programme and a very memorable week in Ghent.

All the best,

Pieter Spanoghe
Chair IUPAC 2019

Nathan De Geyter
Co-chair IUPAC 2019

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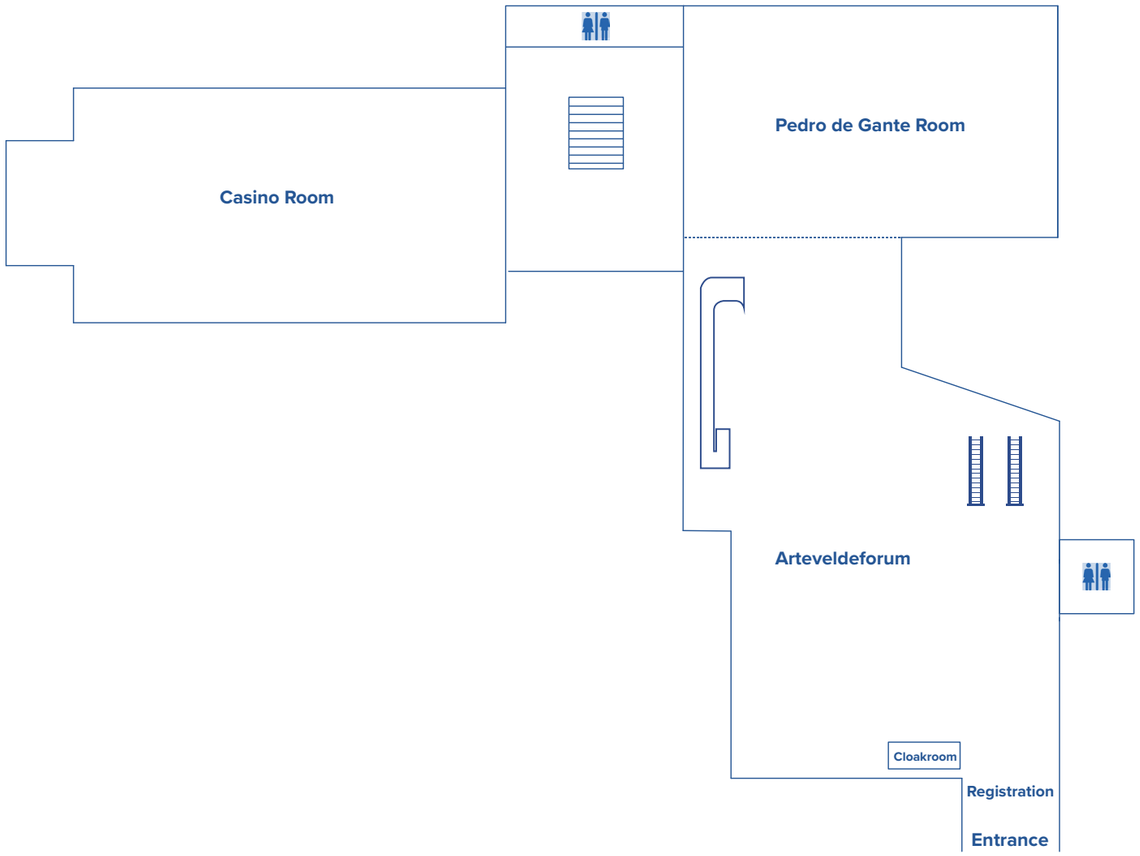
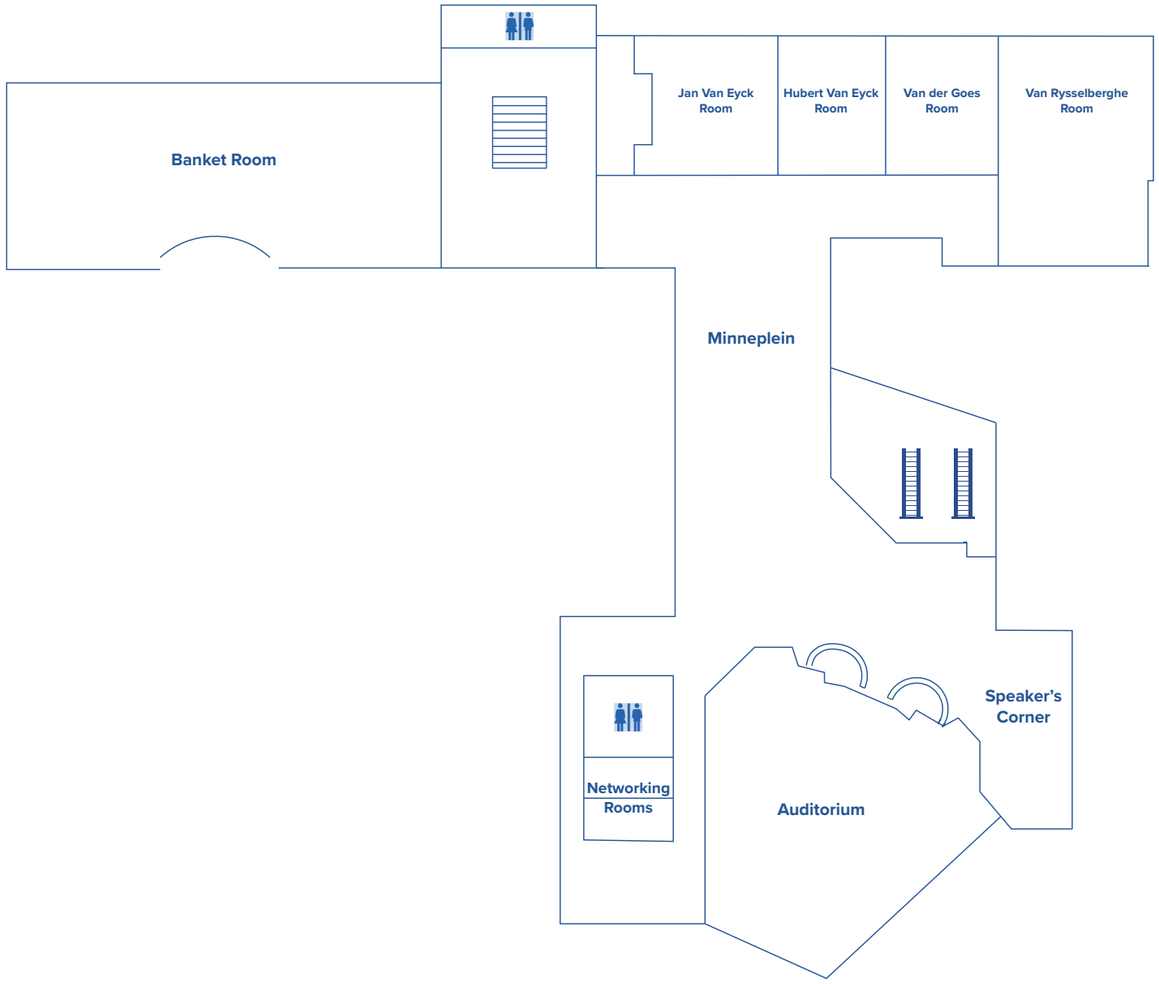
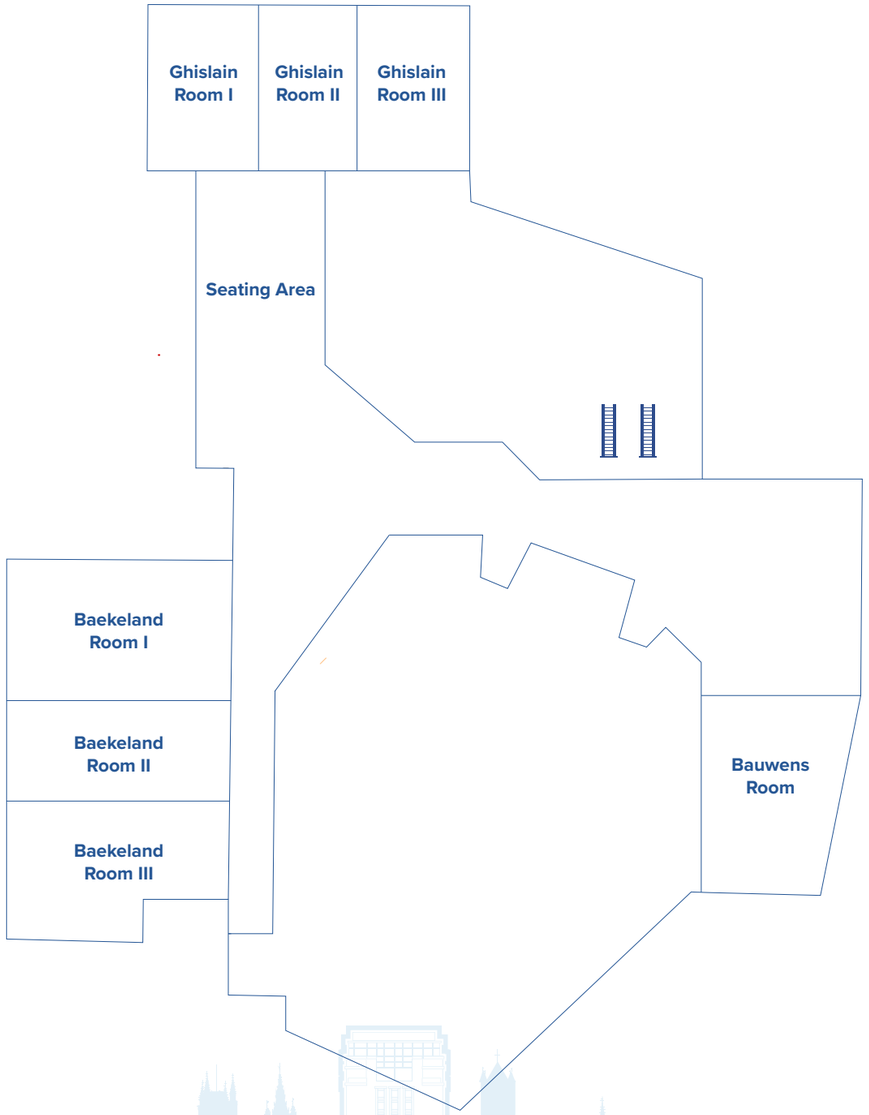
## Floor Plan - Ground Floor




## Floor Plan - First Floor



## Floor Plan - Second Floor




## Topic Colour Codes

- Topic 1: Stewardship, Regulation and Communication: Future Challenges
- Topic 2: ISCP - Novel Agricultural Technologies
- Topic 3: Discovery and Optimization of Crop Protection Products
- Topic 4: Formulation and Application Technologies
- Topic 5: Non-dietary Human Health Hazard, Exposure and Risk
- Topic 6: Food Quality and Safety
- Topic 7: Environmental Fate, Transport and Metabolism
- Topic 8: Ecosystem and Ecological Risk Assessment
- Topic 9: Mode of Action and Resistance

## Auditorium

### Sunday, May 19

15.00 **Registration**

16.30 **Opening Session**
**Chairs:** Pieter Spanoghe, Chair IUPAC 2019 & Nathan De Geyter, Co-Chair IUPAC 2019

**Official opening of the IUPAC 2019 Crop Protection Congress**
Pieter Spanoghe, Nathan De Geyter

**Welcome at IUPAC: 100 year anniversary and crop protection history**
Laura McConnel, Bayer, USA and Ken Racke, Corteva Agriscience, USA

**IUPAC Award Presentation and lecture to honour Mark Lynch**
Gordon Rennick, Department of Agriculture, Food and the Marine, Ireland

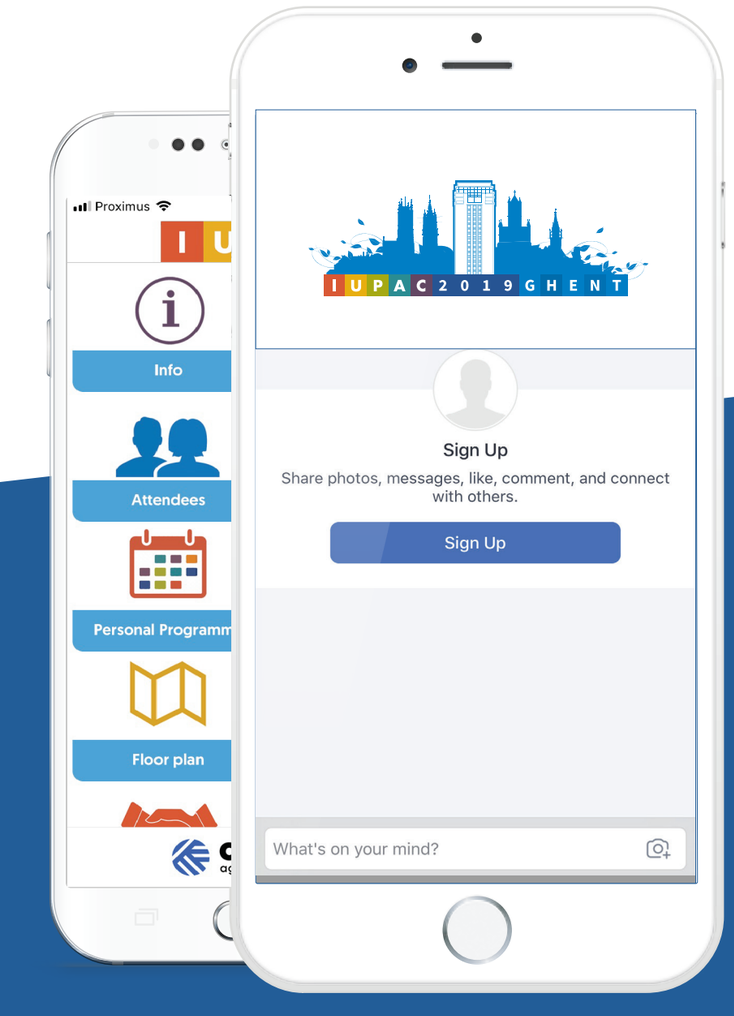
**Words of Welcome by the Congress Main Sponsor**
Rajan Gajaria, Corteva Agriscience, USA

**Words of Welcome by Nouryon, Reception Sponsor**
Karin Bergström, Nouryon, Sweden

18.00 Welcome Reception offered by

APP

IUPAC 2019 GHENT

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IUPAC 2019

# PROGRAMME MONDAY

IUPAC 2019 GHENT

# Programme - Monday, May 20

| | | Auditorium | Van Rysselberghe Room | Jan Van Eyck Room | Hubert Van Eyck Room | Van der Goes Room | Bauwens Room | Baekeland Room I | Baekeland Room II | Baekeland Room III |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00 | Poster hang-up Presentations upload | | | | | | | | | |
| 08.30 | | Welcome Address M. Van Herreweghe | | | | | | | | |
| 08.40 | | Plenary Talk F. Stoddart | | | | | | | | |
| 09.45 | Coffee | | | | | Coffee | | | | |
| 10.20 | Parallel Sessions | | 3.1 New chemistries targeting insect control (1/2) | 2.1 RNA-based biocontrol | 7.1 Measuring and predicting pesticide fate in soil, water, atmosphere and crops: from micro- to macro-scale | 1.8 Sustainable use and water protection | 1.1 Responsible use training – How drive behavioral change among farmers | 9.1 Fungicides: Mode of action and resistance | 8.1 Effects of pesticides on non-target organisms (1/2) | 5.1 Chances in exposure assessment and mitigation of operator and worker exposure and risk |
| 12.20/12.40 | Lunch | | | | | Lunch | | | | |
| 12.45-14.15 | Lunch Workshops & Lunch Session | | | | | IUPAC and August Kekulé in Ghent (1858-1867): When a dream came true | When plant becomes foods: Benefits and risks posed by the use of microbial control agents in edible plant production | | Multi-actor approaches to enable effective mitigation of pesticides in surface water and groundwater | Residential exposure to pesticides in the Netherlands and beyond |
| 13.00 | Poster Session | Poster Presentations of Topics 1, 5, 7 and 8 | | | | Poster Presentations of Topics 1, 5, 7 and 8 | | | | |
| 14.30-16.30 | Parallel Sessions | | 3.1 New chemistries targeting insect control (2/2) | 2.2 Nanotechno-logies | 7.3 Laboratory-to-Landscape scale level investigations of the fate and transport of pesticides | 4.1 Advanced applications in digital farming | 6.3 Modern analytical techniques to detect and control residues in food and feed (1/3) | 9.2 Herbicides: Mode of action and resistance | 8.1 Effects of pesticides on non-target organisms (2/2) | 5.2 Regulatory updates & advances in exposure assessment and mitigation of resident and bystander exposure & risk |
| 16.30 | Coffee | | | | | Coffee | | | | |
| 17.00-18.00 | Debate | Crop protection: science-based facts and fact based policy | | | | | | | | |

08.30 **Welcome Address**
Mieke Van Herreweghe, Vice-Rector of Ghent university

## Plenary Talk

08.40 **Research excellence through innovation: Doing one's own thing**
Fraser Stoddart, Northwestern University, USA

09.45-10.20 Coffee Break

10.20-12.20/40 **Parallel Sessions**

12.20-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

14.30-16.30 **Parallel Sessions**

16.30-17.00 Coffee Break

17.00-18.00 **Debate**

**Crop protection: Science-based facts and fact-based policy**
Klaus Berend, European Commission
Allan Buckwell, RISE Foundation, Belgium
Hubert Deluyker, ex-EFSA, Belgium
Sofie Vanthournout, Voedselteams vzw
David Zaruk, Odisee University College, Belgium





## 3.1 New chemistries targeting insect control (I)

**Chairs:** Peter Maienfisch, Syngenta Crop Protection AG, Switzerland &
Hisashi Miyagawa, Kyoto University, Japan

10.20 3.1.1 **Discovery and optimization of a novel insecticide, broflanilide**
T. Nakao, Mitsui Chemicals Agro Inc., Japan

10.40 3.1.2 **Studies on a novel insecticide, fluxametamide**
Y. Furukawa, Nissan Chemical Corporation, Japan

11.00 3.1.3 **The discovery of Isocycloseram: A novel isoxazoline insecticide**
M. El Qacemi, Syngenta Crop Protection, Switzerland

11.20 3.1.4 **Discovery, synthesis and structure-activity relationship of tetraniliprole (VayegoTM), a novel diamide insecticide**
R. Fischer, Bayer AG, Germany

11.40 3.1.5 **Cyclaniliprole: A novel diamide insecticide**
M. Tsukamoto, Ishihara Sangyo Kaisha Ltd, Japan

12.00 3.1.6 **Optimization of mesoionic pyrido[1,2-a] pyrimidinone insecticides & discovery of 3-biaryl analogs controlling lepidoptera species**
W. Zhang, FMC Agricultural Solutions, USA

12.20 3.1.7 **MNKE as a natural solution against insecticide-resistant pests**
S. Deprey, Oleon SAS, France

12.20-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

## 3.1 New chemistries targeting insect control (II)

**Chairs:** Peter Jeschke, Bayer AG, Germany & Xuhong Qian, East China Normal University, China

14.30 3.1.8 **Biology & chemistry connected: The development of Inscalis®**
C. Koradin, BASF SE, Germany

14.50 3.1.9 **Spiropidion discovery: Road spectrum control of sucking pests and mites for multi-crop utility**
M. Muehlebach, Syngenta Crop Protection, Switzerland

15.10 3.1.10 **Synthesis and biological activity of a novel insecticide, benzpyrimoxan**
E. Satoh, Nihon Nohyaku Co. Ltd., Japan

15.30 3.1.11 **Design, synthesis and acaricidal activities of Cyflumetofen analogues based on carbon-silicon isosteric replacement**
C. Zhou, East China University of Science and Technology, China

15.50 3.1.12 **Cycloclavine: A natural product with insecticidal potential**
J. Dickhaut, BASF SE, Germany

16.10 3.1.13 **Design, synthesis of OfHex1 Inhibitors as novel pesticidal leads**
J. Zhang, China Agricultural University, China

16.30-17.00 Coffee Break

## 2.1 RNA-based biocontrol

**Chair:** Geert Plaetinck, Syngenta, Belgium

10.20 2.1.1 **RNA-based biocontrols: The bio-delivery challenge**
P. Feldmann, Syngenta, Belgium

10.40 2.1.2 **The OST-complex as target for RNAi-based pest control in N. Lugens**
K. De Schutter, Ghent University, Belgium

11.00 2.1.3 **RNA interference-based crop protection: Food & feed safety, detectability, regulation, and efforts towards international harmonization**
G.A. Kleter, RIKILT Wageningen University & Research, The Netherlands

11.20 2.1.4 **A novel and efficient virus-based RNAi delivery system for fruit flies**
C.N.T. Taning, Ghent University, Belgium

11.40 2.1.5 **Liposome encapsulation and EDTA formulation of dsRNA improves oral RNA interference efficiency in the neotropical stinkbug Euschistus heros**
N.L. Castellanos, Ghent University, Belgium

12.00 2.1.6 **The use of nanocarriers and formulations to improve RNAi-based pest control**
O. Christiaens, Ghent University, Belgium

12.20 2.1.7 **Guanylated polymer mediate delivery of dsRNA in midgut-derived cell line of the spruce budworm, choristoneura fumiferana (CF203)**
Z. Martinez, Ghent University, Belgium

12.20-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

## 2.2 Nanotechnologies

**Chair:** R. Kookana, CSIRO, Land & Water, Australia

14.30 2.2.1 **Nano-scale formulation of botanical pesticides for use in sustainable agriculture**
L.F. Fraceto, São Paulo State University, Brazil

14.50 2.2.2 **Nanopesticides and their performances against their conventional analogues**
R. Kookana, CSIRO, Land & Water, Australia

15.10 2.2.3 **The regulation of mesoporous silica nanoparticles to regulate the uptake and transportation performance of pesticides in cucumber**
P. Zhao, Chinese Academy of Agricultural Sciences, China

15.30 2.2.4 **Trichoderma harzianum biogenic metallic nanoparticles toxicity against Spodoptera frugiperda populations resistant to Bt maize**
R. A. Polanczyk, São Paulo State University, Brazil

15.50 2.2.5 **Silver nanoparticles stabilized with humic substances cause enhanced toxicity towards wheat plants and algae**
I.V. Perminova, Lomonosov Moscow State University, Russia

16.10 Discussion

16.30-17.00 Coffee Break





## 7.1 Measuring and predicting pesticide fate in soil, water, atmosphere and crops: From micro- to macro-scale

**Chairs:** Pamela Rice, Agricultural Research Service, USA & Colin Brown, University of York, UK

10.20 7.1.1 **Long-term monitoring of pesticides in air and atmospheric deposition in Sweden**
J. Kreuger, Swedish University of Agricultural Sciences, Sweden

10.40 7.1.2 **Development of a predictive tool for herbicide adsorption in soil**
G. Styles, Monash University, Australia

11.00 7.1.3 **Impact of uncertainty in model input data on predicted pesticide leaching at the field level**
C.G. Hoogeweg, Waterborne Environmental Inc., USA

11.20 7.1.4 **Strategies to protect water quality: Evaluation of management practices to reduce the off-site transport of pesticides with runoff from turfgrass**
P.J. Rice, Agricultural Research Service, USA

11.40 7.1.5 **Predicting pesticide concentrations to support raw water intake for drinking water production, case study WPC De Blankaart in Belgium**
N. Desmet, Flemish Institute for Technological Research, Belgium

12.00 7.1.6 **Mapping pesticide fate processes in Africa to analyse potential pesticide hotspots**
C. Hendriks, University of Oxford, UK

12.20 7.1.7 **Quantification of pesticide residues in environmental compartments in fruit orchards of Flanders, Belgium**
G. Claus, Ghent University, Belgium

12.40-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

## 7.3 Laboratory-to-landscape scale level investigations of the fate and transport of pesticides

**Chairs:** Amy Ritter, Waterborne Environmental Inc., USA &
Marco Trevisan, Università Cattolica del Sacro Cuore, Italy

14.30 7.3.1 **Dicamba behavior under field and laboratory conditions**
T.C. Mueller, University of Tennessee, USA

14.50 7.3.2 **Pesticide sorption by soils and sediments, as well as other materials such as microplastics and biochars**
A. Farenhorst, University of Manitoba, Canada

15.10 7.3.3 **Evaluation of the representativeness of public monitoring data to assess the potential for leaching to groundwater: A case study**
V.B. Houck, Arcadis, USA

15.30 7.3.4 **Influence of grape cultivation on the management and quality of groundwater in Tidone Valley**
N.A. Suciu, UCSC, Italy

15.50 7.3.5 **Assessment of potentially vulnerable use areas in western Africa**
C.G. Hoogeweg, Waterborne Environmental, USA

16.10 7.3.6 **Understanding the fate of agricultural chemical transport to surface water using multi-scale field studies**
A. Ritter, Waterborne Environmental Inc., USA

16.30-17.00 Coffee Break

## 1.8 Sustainable use and water protection

**Chairs:** Caroline Harris, Exponent International Ltd., UK & Geert Haesaert, Ghent University Belgium

10.20 1.8.1 **The TOPPS project: Developing and disseminating best management practices for water protection in agriculture – Concept and methodology**
V. Laabs, BASF SE, Germany

10.40 1.8.2 **Current and future challenges for achieving and maintaining good chemical status in EU water bodies following pesticide use**
R.J. Blake, Compliance Services International, UK

11.00 1.8.3 **Mitigating pesticide runoff in an agricultural catchment**
I. Joris, VITO, Belgium

11.20 1.8.4 **Effect of differing regulatory guidance on the risk-based management of active pharmaceutical ingredients in industrial wastewater discharges**
N.D. Forsberg, Arcadis U.S., USA

11.40 1.8.5 **Step- water: Online water protection evaluation tool for crop sprayers**
M.Roettele, BetterDecisions, Germany

12.00-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

12.45-14.15 **Lunch Session**
**IUPAC and August Kekulé in Ghent (1858-1867): When a dream came true**
Pierre De Clercq, Ghent University, Belgium

## 4.1 Advanced applications in digital farming

**Chair:** Abdul Mouazen, Ghent University, Belgium

14.30 4.1.1 **Remotely-piloted aircraft for delivery of agrochemicals: Operational experience and success**
D. Gilles, University of California, USA

14.50 4.1.2 **DroplegUL – Site specific application in arable crops and vegetables**
R. Heinkel, Lechler GmbH, Germany

15.10 4.1.3 **On-line field measurement of yellow rust and fusarium head blight cereal crops using a hyperspectral imager**
R.L. Whetton, University College Dublin, Ireland

15.30 4.1.4 **Applying the third and fourth dimension to precision agriculture in apple production**
D.C. de Hoog, Wageningen UR, The Netherlands

15.50 4.1.5 **OPTIMA - OPTimised Integrated Pest Management for precise detection and control of plant diseases in perennial crops and open-field vegetables**
N. Mylonas, Agricultural University of Athens, Greece

16.30-17.00 Coffee Break





## 1.1 Responsible use training – How drive behavioral change among farmers

**Chair:** Andrew Ward, CropLife International, Belgium

10.20 Opening remarks
A. Ward, CropLife International, Belgium

10.40 1.1.1 **'Safe use harbour' assisting china on sustainable agriculture**
L. Zhengping, Plant Quarantine and Protection Station of Heilongjiang Province, China

11.00 1.1.2 **Bayer's safe use ambassador programme**
V. Sharma, Bayer Pte Ltd, Singapore

11.20 1.1.3 **Pollinators & pesticides can coexist – Creating awareness through responsible use of pesticides & increasing productivity in pollinator dependent crops through professional pollination**
V. Sharma, Bayer, Singapore

11.40 1.1.4 **The EVATM app, an ICT tool for a more correct use of plant protection products and a better implementation of IPM**
D. Bylemans, Research Center for Fruit npo, Belgium

12.00 1.1.5 **Improving the impact of stewardship: Sustained farmer behaviour change at scale**
A. Ward, CropLife International, Belgium

12.20 1.1.6 **Stewardship of unmanned aerial vehicle in crop protection**
R. Brown, Carabid Life Science Consulting, Switzerland

12.40-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

12.45-14.15 **Lunch Workshop**
**When plant becomes foods: Benefits and risks posed by the use of microbial control agents in edible plant production e.g. the case of Bacillus thuringiensis versus human pathogenic B. cereus**
**Organisers:** Mieke Uyttendaele (Dept. Food Technology, Safety & Health), Monica Höfte (Dept. of Plants & Crops), Ghent University, Belgium, member of EU COST Action 16110 on HUPLANTControl

## 6.3 Modern analytical techniques to detect and control residues in food and feed (I)

**Chairs:** Jose Diana di Mavungu, Ghent University, Belgium &
Sara Cunha, University of Porto, Portugal

14.30 6.3.1 **The role of analytical testing to ensure food safety and quality**
N. Gras, Chilean Food Safety and Quality Agency, Chile

14.50 6.3.2 **Comparison of Electrospray and UniSpray, a novel atmospheric pressure ionization interface, for LC-MS/MS analysis of pesticides residues in food and water matrices**
J.H.Y. Galani, University of Leeds, UK

15.10 6.3.3 **Application of deep eutectic solvent in extraction of emergent pollutants in fish oils**
S.C. Cunha, University of Porto, Portugal

15.30 6.3.4 **Multi-plug filtration cleanup and its automated method for pesticide/veterinary drug residue analyses**
C. Pan, China Agricultural University, China

15.50 6.3.5 **Pesticide residue analysis for herbs and species methodology, exposure evaluation and regulations**
M.V. Cesio, GACT. Facultad de Quimica, Uruguay

16.10 6.3.6 **Does the chemical control of ramularia interfere in the food safety of barley grains?**
M.C. Palladino, PDU, Uruguay

16.30-17.00 Coffee Break

## 9.1 Fungicides: Mode of action and resistance

**Chairs:** Geert Haesaert, Ghent University Belgium & Andreas Mehl, Bayer AG, Germany

10.20 9.1.1 **Aminopyrifen, a novel 2-amino nicotinate fungicide with a unique mode of action and broad-spectrum**
M. Hatamoto, Agro-Kanesho Co., Japan

10.40 9.1.2 **Different sensitivity of sclerotinia sclerotiorum towards SDHIs with both target site and non-target site mutations identified through sensitivity monitoring in Japan and France**
M. Yamashita, Nihon Nohyaku Co., Japan

11.00 9.1.3 **The mitochondrial complex III inhibitor Ametoctradin has an unusual binding mode**
M. Fehr, BASF SE, Germany

11.20 9.1.4 **Molecular aspects of fungicide resistance and relevance for resistance management**
A. Mehl, Bayer AG, Germany

11.40 9.1.5 **Isotianil - A new tool for the control of wheat blast caused by Magnaporthe oryzae Triticum / Pyricularia graminis-tritici, an emerging global threat**
D. Portz, Bayer AG, Germany

12.00 9.1.6 **Multi-resistant populations of cercospora beticola, new problem need adequate chemical solutions**
N.R. Trkulja, Institute for Plant Protection and Environment, Serbia

12.00-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

## 9.2 Herbicides: Mode of action and resistance

**Chairs:** Benny De Cauwer, Ghent University, Belgium & Franck Dayan, Colorado State University, USA

14.30 9.2.1 **Aclonifen – Deciphering a novel mode of action of a commercialized herbicide using systems biology**
P. von Koskull-Doering, Bayer AG, Germany

14.45 9.2.2 **Disruption of plant de novo pyrimidine biosynthesis at a specific step in the pathway by a new class of herbicide causes selective phytotoxicity with commercial levels of activity**
S. Gutteridge, FMC Agricultural Solutions, USA

15.00 9.2.3 **Molecular insights into the mechanism of 4-Hydroxyphenylpyruvate Dioxygenase inhibition: Enzyme kinetics, X-ray crystallography and computational simulations**
W.C. Yang, Central China Normal University, China

15.15 9.2.4 **Patterns of molecular evolution and population genetics of glyphosate resistance in Amaranthus palmeri show curvilinear relationships between EPSPS gene copy number and resistance in some, but not all, biotypes within populations**
B. Nichols, Cotton Inc., USA

15.30 9.2.5 **Unraveling herbicide detoxification mechanisms in several plant species - Implication for non-target site weed resistance management**
R. Beffa, Bayer AG, Germany

15.45 9.2.6 **Crop specificity of herbicide safeners**
G. Giannakopoulos, Newcastle University, UK

16.00 9.2.7 **Reactive oxygen species trigger the fast action of glufosinate**
F.E. Dayan, Colorado State University, USA

16.15 Discussion

16.30-17.00 Coffee Break





## 8.1 Effects of pesticides on non-target organisms (I)

**Chairs:** Paul van den Brink, Wageningen University, The Netherlands & Karel De Schamphelaere, Ghent University, Belgium

10.20 8.1.1 **Environmental screening of agricultural contaminants in fresh water ecosystems as part of amphibian biodiversity conservation**
T. Goessens, Ghent University, Belgium

10.40 8.1.2 **Fish extended one generation reproduction test: A Comparison between Medaka and Fathead minnow**
T. Goodband, Smithers Viscient Ltd., UK

11.00 8.1.3 **Interspecific variability of fatty acid profiles of freshwater diatoms in response to herbicides**
F. Demailly, Irstea Cestas, France

11.20 8.1.4 **Experimental studies to provide long-term data sets for testing population models for Lemna sp. and Myriophyllum spicatum**
S. Taylor, Adama Agricultural Solutions, UK

11.40 8.1.5 **Holistic considerations for the derivation of specific protection goals for risk assessment based on ecosystem services – A case study for non-target terrestrial plants**
C.J. Mayer, BASF SE, Germany

12.00 8.1.6 **Protection goals for terrestrial non-target plants: Is in-field protection of beneficial weeds achievable?**
J. Davies, Syngenta, UK

12.20 8.1.7 **Is the large-scale production of banana and pineapple posing a risk to stream biota in Costa Rican rivers?**
L. Herrero-Nogareda, University of Copenhagen, Denmark

12.40-14.30 Lunch, Lunch Workshops, Lunch Session and Poster Session

12.45-14.15 **Lunch Workshop**
**Multi-actor approaches to enable effective mitigation of pesticides in surface water and groundwater**
**Organisers:** WaterProtect, FairWay and TOPPS consortia

## 8.1 Effects of pesticides on non-target organisms (II)

**Chairs:** Paul van den Brink, Wageningen University, The Netherlands & Karel De Schamphelaere, Ghent University, Belgium

14.30 8.1.8 **HPPD gene of non-target microorganisms: A new tool to monitor the exposure of soil microbial communities to β-triketone herbicides?**
C. Thiour-Mauprivez, Université de Perpignan, France

14.50 8.1.9 **Volatile chemical pesticide - Guideline for earthworm acute toxicity test**
L. Mao, Chinese Academy of Agricultural Sciences, China

15.10 8.1.10 **Agricultural field studies on neonicotinoids in pollen from bees**
J.R. Coats, Iowa State University, USA

15.30 8.1.11 **Guttation as an exposure route in the risk assessment for plant protection products – Review of the available data**
U. Zumkier, Tier3 Solutions, Germany

15.50 8.1.12 **Recommendations for standardized oral toxicity test protocols for larvae of solitary bees, Osmia spp.**
I. Meeus, Ghent University, Belgium

16.10 8.1.13 **A functional toxicogenomics approach to understand the honey bee-friendly profile of the butenolide insecticide flupyradifurone**
R. Nauen, Bayer AG, Germany

16.30-17.00 Coffee Break

## 5.1 Chances in exposure assessment and mitigation of operator and worker exposure and risk

**Chairs:** Rianda Gerritsen-Ebben, TNO, The Netherlands & Suzanne Spaan TNO, The Netherlands

10.20 5.1.1 **Derivation of transfer coefficients for the risk assessment of crop inspection activities in early growth stage arable crops**
S.D. Adham, Syngenta Ltd. International Research Centre, UK

10.40 5.1.2 **Pesticide exposure assessment of residents during pesticides spraying operations: Application of EFSA's model with field data**
I. Ruthy, ISSeP, Liège, Belgium

11.00 5.1.3 **Dislodgeable foliar residue studies: Refinement of leaf surface calculation**
Ch. H. Roussel, STAPHYT, France

11.20 5.1.4 **Risk mitigation: PPE requirements based on risk assessment**
A. Shaw, University of Maryland Eastern Shore, USA

11.40 5.1.5 **Performance of a single layer of clothing or gloves in case of exposure to pesticides**
S. Spaan, TNO, The Netherlands

12.00 5.1.6 **Conducting operator exposure studies on stored potatoes**
J. Bartolome, Envigo, Spain

12.20-14.15 Lunch, Lunch Workshops, Lunch Session and Poster Session

12.45-14.15 **Lunch Workshop**

**Residential exposure to pesticides in The Netherlands and beyond**

**Organisers:** Esmeralda Krop (IRAS, Utrecht University), Jan Duyzer (TNO), Rianda Gerritsen-Ebben (TNO), Jan van de Zande (Wageningen University and Research), Erik van den Berg (Wageningen University and Research)

## 5.2 Regulatory updates and advances in exposure assessment and mitigation of resident and bystander exposure and risk

**Chairs:** Clare Butler Ellis, Silsoe Spray Applications Unit Ltd, UK &
Sabine Martin, German Federal Institute for Risk Assessment, Germany

14.30 5.2.1 **Update of the EFSA Guidance Document on non-dietary exposure assessment to plant protection products**
F. Istace, EFSA, Italy

14.50 5.2.2 **Recent developments in assessing resident and bystander exposure to pesticides**
M.C. Butler Ellis, Silsoe Spray Applications Unit Ltd, UK

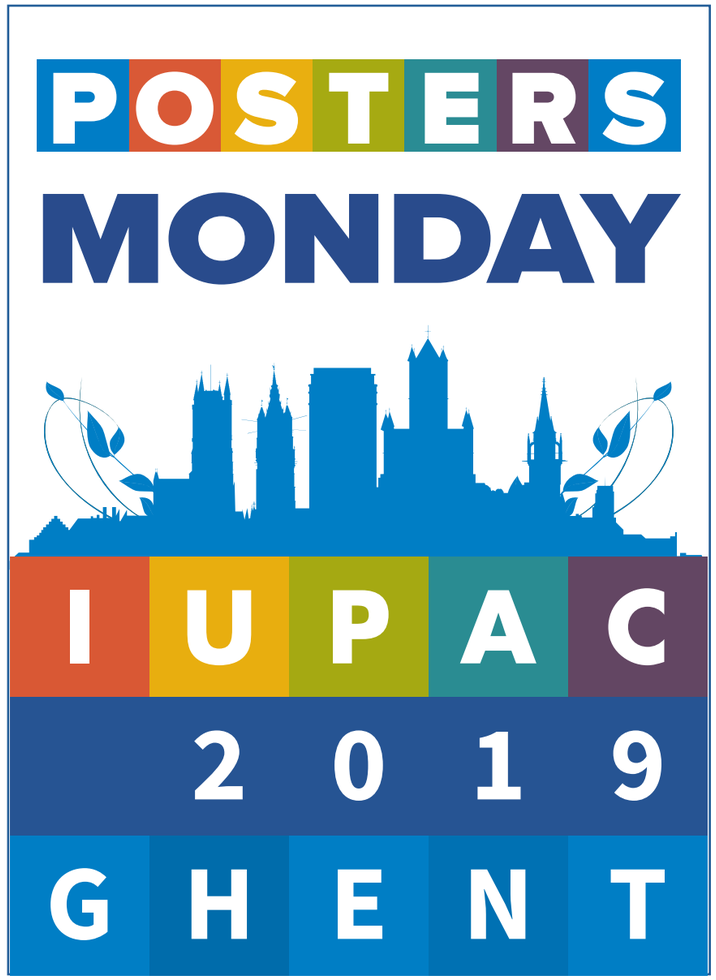
15.10 5.2.3 **Spray drift exposure of residents and bystanders after application of plant protection products in high crops**
S. Martin, German Federal Institute for Risk Assessment, Germany

15.30 5.2.4 **Assessing resident and bystander health risks from pesticide use in conventional and innovative cropping systems with the browse model**
L. Mamy, INRA-AgroParisTech-Université Paris-Saclay, France

15.50 5.2.5 **Risk assessment of combined exposure to multiple chemicals; legislative and scientific approaches for implementation of a mechanism – Based test strategy**
J. Schubert, German Federal Institute for Risk Assessment, Germany

16.10 Discussion

16.30-17.00 Coffee Break



Monday | Tuesday | Wednesday | Thursday | Friday | **Posters Monday**

## Posters topic 1

## Stewardship, regulation and communication: Future challenges

**P1.1** **Best management practices for limiting pesticide drainage & leaching**
J.S. Dyson
Syngenta Crop Protection AG, Switzerland

**P1.2** **Skin sensitization assessment for agrochemicals – A suggested approach assessing the applicability of non-animal test methods/approaches and global acceptance**
A. Martins, R. Guest, K. Fitzpatrick, J. Marshall
Envigo, Huntingdon, UK

**P1.3** **Post-reach 2018 assessment of in vitro skin sensitisation testing for organic substances**
S. Jacobs[1], M. Bilau[1], A. De Smedt[2], K. Vriens[2], I. van de Gevel[2]
[1]Arcadis Belgium nv/sa; [2]Janssen Pharmaceutica N.V., Belgium

**P1.4** **Results of a multi-stakeholder workshop on incorporating the benefits of vegetative filter strips into aquatic risk assessment and risk management of pesticides**
L.L. McConnell[1], D. Seth-Carley[2], J.X. Tang[1]
[1]Bayer U.S.; [2]North Carolina State University, USA

**P1.5** **A simple system for border control to prevent illegal crop protection products entering a country**
H. Chin Sue
Envigo, UK

**P1.6** **Predictive approaches for assessing environmental fate and metabolism of pesticide**
M. Ma, K. Lynn, V. Badwaik, P. Yu, M. Chase, Y. Adelfinskaya, M. Hastings, A. Eatherall, S. Gehen, G. Shan
Crop Protection Regulatory Sciences, USA

**P1.7** **Risk mitigation measures for pesticides in the EU (MAgPIE project) – Recommendations from the workshop experts towards future application techniques**
A. Alix
Corteva Agrisciences, UK

**P1.8** **Evaluation of in-vitro plant metabolism as a tool to aid identification of metabolites from crop metabolism studies**
R. Mumford, S.H. Swales
Smithers Viscient ESG Ltd, UK

**P1.9** **Bringing satellite based disease warning to African smallholder farmers over social channels**
A. Sharma
BASF SE, Germany

**P1.10** **Assessing the accuracy of sub-catchment generated vis-NIR-PLSR models in simulating field spatial trends of some measured soil properties**
E. Afriyie, A.P. Guerrero, S. Nawar, A. Verdoodt, A.M. Mouazen
Ghent University, Belgium

**P1.11** **Use of a GeoInformation System (GIS) in agriculture to protect water quality**
C. Geck[1], D. Feise[2], D. Lembrich[3]
[1]University Hamburg; [2]Geoinformationservice; [3]Bayer AG, Germany

**P1.12** **Review of agrochemical regulations in Brazil**
A.P. Martins
Envigo, UK

**P1.13** **Bayer crop science, building society's trust through transparency**
C. Morr
Bayer AG, Germany

## Posters topic 5
## Non-dietary human health hazard, exposure and risk

**P5.1** **Phosmet: Growing regulatory uncertainty in areas of scientific certainty**
C. Strupp[1], P. Aikens[1], E. Codrea[2], T. Ehrlich[2], E. Gur[2]
[1]Gowan Crop Protection, UK; [2]Gowan Company, USA

**P5.2** **Unit exposure levels in electric backpack sprayer and stretcher-mounted sprayer pesticide preparator/ applicator in orchards**
X.H. An, S.G. Wu, J.H. Jiang
Zhejiang Academy of Agricultural Sciences, China

**P5.3** **Dislodgeable Foliar Residue (DFR) studies with simulated rain**
S. Brewin[1], H. Harper[1], J. Bartolome[2], E. Ale[2]
[1]Envigo CRS Ltd, UK; [2]Envigo CRS Ltd. Sucursal en España, Spain

**P5.4** **Conducting operator exposure studies on stored potatoes**
S. Brewin[1], H. Harper[1], J. Bartolome[2], E. Ale[2]
[1]Envigo CRS Ltd, UK; [2]Envigo CRS Ltd. Sucursal en España, Spain

**P5.5** **Dermal absorption studies: A review of the impact of the new EFSA guidance document on dermal absorption data**
A. Jones, S. Penketh
Envigo, UK

**P5.6** **OECD 443 extended one generation reproduction toxicity study: Some important considerations relating to study conduct**
G. Armour, D.P. Myers, S. Renaut, R. Renaut, D. Stannard
Envigo, UK

**P5.7** **Risk assessment related to phytosanitary practices of farmers in Zribet el Oued and Sidi Okba, Biskra-Algeria**
H.H. Boukhalfa, N. Guehiliz, K. Deghnouche
University Mohamed Khider-Biskra, Algeria

**P5.8** **Analysis of phytosanitary practices of farmers in Doucen, Biskra-Algeria**
H.H. Boukhalfa, K. Deghnouche, K. Farhi, H. Zikem
University Mohamed Khider-Biskra, Algeria

**P5.9** **Exposure assessment to pesticides in the vicinity of treated field: Case study in school playgrounds and in private gardens**
I. Ruthy[1], S. Remy[1], M. Veschkens[1], B. Huyghebaert[2], J.L. Herman[2], O. Pigeon[2], B. Schiffers[3]
[1]ISSeP; [2]CRA-W; [3]ULiège, Belgium

**P5.10** **Assessment of exposure to pesticides of residents living in the vicinity of treated fields**
I. Ruthy[1], S. Remy[1], Ch. Frippiat[1], M. Veschkens[1], J.L. Herman[2], N. Ducat[2], O. Pigeon[2], B. Schiffers[3], B. Huyghebaert[2]
[1]ISSeP; [2]CRA-W; [3]ULiège, Belgium

**P5.11** **Metabolomics study for bio-nano-selenium effect on leaf components and lobular disease of plum**
D. Li, J.Q. Li, W.C. Lian, Y.L. Wu, C.P. Pan
China Agricultural University, China

**P5.12** **Metabolism of 14C-ipconazole in the rat**
J. O'Connor[1], L. Knight[1], T. Eizuka[2], T. Tack[3]
[1]Envigo, UK; [2]Kureha Corporation, Japan; [3]Arysta LifeScience, UK

## Posters topic 5
## Non-dietary human health hazard, exposure and risk

**P5.13** **Comparative in vitro metabolism of [phenyl-14c(u)]- and [triazine-2-14c]-metsulfuron methyl in mouse, rat, rabbit, dog and human hepatocytes**
V. Gaddamidi[1], L. Shen[2]
[1]FMC Agricultural Solutions; [2]Frontage Laboratories, USA

**P5.14** **An inter-laboratory cross validation study for the determination of T3 and T4 in rat serum samples using LC-MS/MS**
S. Diaram[1], A. Peard[1], J. Romaguera[2]
[1]Envigo, UK; [2]Envigo, Spain

**P5.15** **Toxicological impact from the plant protection products used in Sancti Spíritus, Cuba: Study case**
E. López Dávila[1,2], M. Houbraken[2], J. De Rop[2], O. Romero Romero[1], J. Du Laing[2], P. Spanoghe[2]
[1]Sancti Spíritus University, Cuba; [2]Ghent University, Belgium

**P5.16** **PBTK modelling to refine health based guidance setting**
J. Baumann, F. Weysser, L. Goerlitz
Bayer AG, Germany

## Posters topic 7
## Environmental fate, transport and metabolism

**P7.1** **Dissipation and residue analysis of imidacloprid in okra crop (ladies' finger) under field conditions in different agro-climatic zones of India**
B. Saha, K. Vishwakarma, S. Rao, U.K. Shinde
NACL Industries Limited, India

**P7.2** **Accumulative behavior and half-lives of six pesticides in apple orchard**
Q.S. An, D. Li, J. Wu, C.P. Pan
China Agricultural University, China

**P7.3** **Development of a harmonized protocol for measurement of foliar wash-off coefficients: First results**
L.H. Hand[1], E. Hellpointner[2], P. Volz[3], A. Perry[4], S. Prost[5], V. Gourlay[6], D. Hennecke[7], M. Popescu[8]
[1]Syngenta, UK; [2]Bayer AGy; [3]BASF SE, Germany; [4]Eurofins Agroscience Services Ltd, UK; [5]Eurofins Agroscience Services EcoChem GmbH; [6]RLP AgroScience GmbH; [7]Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Germany; [8]Agrochemex, UK

**P7.4** **Jasmonic acids facilitate the degradation and detoxification of herbicide isoproturon residues in wheat crops (triticum aestivum)**
L.Y. Ma, H. Yang
Nanjing Agricultural University, China

**P7.5** **Prediction of pesticides emission potential to atmosphere from their molecular properties using the typol tool**
K. Bonnot[1], C. Bedos[1], L. Mamy[1], C. Bockstaller[2], E. Latrille[3], D. Patureau[3], V. Rossard[3], R. Servien[4], P. Benoit[1]
[1]INRA-AgroParisTech-Université Paris-Saclay; [2]Université de Lorraine; [3]Université de Montpellier; [4]InTheRes, France

**P7.6** **Transport of propachlor in soil affected by Triton X-100 and dissolved organic matters**
N. Zhang, X.F. Yao, H. Yang
Nanjing Agricultural University, China

**P7.7** **Aqueous deposition of volatilised lindane – A comprehensive data review of its use as internal standard in wind tunnel studies**
C. Staffa, G. Fent, R. Kubiak
Institute for AgroEcology, Germany

**P7.8** **Metabolism of 14C-ipconazole in plants**
J. O'Connor[1], A. Crowe[1], T. Eizuka[2], T. Tack[3]
[1]Envigo, UK; [2]Kureha Corporation, Japan; [3]Arysta LifeScience, UK

**P7.9** **The degradation of crop protection products in Brazilian soils**
N. Baudin[1,2], M. Garrod[1], I. Bramke[1], C. Mckillican[3], G. Bending[2], S. Marshall[1]
[1]Syngenta Ltd.; [2]University of Warwick, UK; [3]Syngenta Crop Protection, USA

**P7.10** **Kinetic models for predicting the degradation rate of diamide insecticides and triazole fungicides in shallot**
H.J. Kim, S.H. Lee, S.Y. Kwak, A. Sarker, S.C. Cho, H.R. Jeong, J.E. Kim
Kyungpook National University, Korea

**P7.11** **Occurrence of pesticides in waters intended for agricultural irrigation in the lower Llobregat river basin**
J. Quintana, A. de la Cal, M.R. Boleda
Aigües de Barcelona, Spain

## Posters topic 7
## Environmental fate, transport and metabolism

**P7.12** **Predicted environmental concentrations and predicted no effect concentrations from EFSA conclusions compared to measured environmental concentrations and environmental quality standards in Sweden**
G. Boström, K. Berggren, C. Gutfreund, M. Gönczi, J. Kreuger
Swedish University of Agricultural Sciences, Sweden

**P7.13** **Monitoring of pesticide losses to surface water from commercial greenhouse areas in Sweden 2017-2018**
J. Kreuger[1], O. Jonsson[1], K. Löfkvist[2], T. Hansson[3]
[1]Swedish University of Agricultural Sciences; [2]RISE Research Institutes of Sweden; [3]Grön Kompetens AB, Sweden

**P7.14** **Residue and safety evaluation of fluazinam in green onions and scallions**
H. Min, X. Zhu, J. Chunhong, P. Yu
Beijing Academy of Agricultural and Forestry Science, China

**P7.15** **Occurrence of organochlorine and organophosphorous pesticides in Pucara river basin in Bolivia**
M.M. Alvarez[1], C. Sans[2], V. Romero[2], H. Antezana[1], S. Mirta[1], S. Castellón[1]
[1]Centro de Aguas y Saneamiento Ambiental; [2]Unidad de Limnología Recursos Acuáticos; [3]Universidad Mayor de San Simón, Bolivia; [4]University of Barcelona, Spain

**P7.16** **Levels of pesticide residues in the main and the blue Nile waters in the Sudan**
G.A.A. Nesser[1], A.O. Abdelbagi[2], M. Tagelseed[1], A.S.A. Ishag[2], A.M.A. Hammad[2]
[1]International University of Africa; [2]University of Khartoum, Sudan

**P7.17** **Autumn determination of pesticides in Lis river, Portugal**
S. Sousa[1], S. Jorge[2], J. Vieira[2], J.G. Silva[3], V. F. Domingues[1], C. Delerue-Matos[1]
[1]REQUIMTE/LAQV-GRAQ; [2]Águas do Centro Litoral; [3]Águas de Santo André, Portugal

**P7.18** **The influence of antibiotics on the degradation and enantioselectivity of the chiral pesticide beta-cypermethrin in soil**
W. Jiang, J. Gao, P. Wang
China Agricultural University, China

**P7.19** **Do the agricultural adjuvants have any impact on the microbial toxicity and biodegradation of the active substance?**
P. Besse-Hoggan, C. Descarpentries, M. Youness, M. Sancelme, I. Batisson
[1]Université Clermont Auvergne, France

**P7.20** **Viticulture in the north of Italy: Development of priority list and multi-residual analytical method for plant protection products presence in groundwater**
R. Zambito Marsala, E. Capri, N.A. Suciu
Università Cattolica del Sacro Cuore, Italy

**P7.21** **Pesticide residues in rainwater from the northwest region of Uruguay: Method validation and seasonal analysis**
N. Besil, R. Hladki, F. Rivero, M.V. Cesio, H. Heinzen
Universidad de la República, Uruguay

**P7.22** **Dichlorvos behaviour in soils: Approach to leaching process**
P. Parlakidis[1], N.J. Bustos[2], A. Iriel[2], A. Fernández Cirelli[2], Z. Vryzas[1]
[1]University of Thrace, Greece; [2]Universidad de Buenos Aires, Argentina

**P7.23** **Analysis of organchlorine pesticides (OCPS) residues in fish from Edko lake (North Egypt) by using eco-friendly methods and their health risk implications for humans**
M.A. Abbassy[1], M.A. Khalifa[2,3], O.A. Omar[3], E. Noreldin[1]
[1]Damanhour University; [2]Kaferelsheikh University, Egypt; [3]Ministry of Health, Kuwait

## Posters topic 7
## Environmental fate, transport and metabolism

**P7.24** **Application of the principles of green chemistry in residues analysis of pesticide chemical in water: 20 years experiences in Egypt**
M.A. Khalifa, M.A. Abbassy[2], A.H. Masoud[1]
[1]Kaferelsheikh University; [2]Damanhour University, Egypt

**P7.25** **Synthesis of eight stereoisomers of zeta cypermethrin and development of a chiral analysis method for use during a subsequent OECD308 study**
M.D. Swift[1], T. Hawkins[1], L. Kong[2]
[1]Pharmaron UK Ltd, UK; [2]FMC Corporation, USA

**P7.26** **A SFC-MS based analytical strategy for stereoisomer analysis in environmental fate and metabolism studies**
K. Lynn, X. Zhou, J. Godbey, T. Trullinger
Corteva AgriScience™, USA

**P7.27** **Target screening of pesticides in agro-food industry sewage sludge by liquid chromatography tandem mass spectrometry**
N.C. Maragou, G. Balayiannis, E. Karasali, K. Machera, E. Markellou, I. Georgaki, E. Karanasios, C. Anagnostopoulos, K. Liapis
Benaki Phytopathological Institute, Greece

**P7.28** **SPE-UHPLC/DAD method for the determination of nine sulphonylurea herbicides in water**
D.B. Sunjka, S.D. Lazic
University of Novi Sad, Serbia

**P7.29** **Photodegradation of strobilurin fungicide mandestrobin in aqueous media**
T. Adachi, Y. Suzuki, T. Fujisawa
Sumitomo Chemical Co., Japan

**P7.30** **Aerobic mineralization – What is it good for?**
D. Shaw, R. Unsworth
Envigo, UK

**P7.31** **Catabolism-driven removal two pesticides in growth medium facilitated by genetically improved paddy plants**
H. Yang, X.N. Su, J.J. Zhang
Nanjing Agricultural University, China

**P7.32** **Molecular identification of indigenous bacteria isolated from pesticides heavily contaminated soils**
A.O. Abdelbagi[1], A.S.A. Ishag[1], A.M.A. Hammad[1], E.A.E. Elsheikh[2], I.A. Mohammed, J.-H. Hur[3]
[1]University of Khartoum, Sudan; [2]University of Sharjah, UAE; [3]Kangwon National University, Republic of Korea

**P7.33** **A new scale-up laboratory test system to simulate degradation in soil under sunlight conditions**
J. Hassink, J. Buda, S. Burdy-Noe, S. Lange, T. Schmidt
BASF SE, Germany

**P7.34** **Behavior of the chiral herbicide imazamox in soils: Enantiomer composition differentiates between biodegradation and photodegradation**
I.J. Buerge, R. Kasteel, T. Poiger
Agroscope, Switzerland

**P7.35** **Reducing volatilization of Prosulfocarb by considering forcing parameters investigated with a laboratory test system**
D.S. Wallace, G. Fent, R. Kubiak
RLP AgroScience GmbH, Germany

## Posters topic 7
## Environmental fate, transport and metabolism

**P7.37** **Characterization of myrigalone photoproducts and evaluation of their antigerminative properties**
A. Khaled[1], M. Sleiman[1], Y. Arbid[1], C. Sac[2], A. Corson[2], C. Bertrand[3], P. Goupil[2], C. Richard[1]
[1]Université Clermont Auvergne; [2]UMR 547-UBP/INRA PIAF; [3]Université of Perpignan Via Domitia, France

**P7.38** **Field soil degradation design to eliminate the influence of surface processes on pendimethalin – Sand cover versus substance incorporation**
H. Bayer, J. Hassink, B. Jene, T. Richter, M. Roos-Majewsky
BASF SE, Germany

**P7.39** **Bioavailability of herbicides: Their role in the fate, efficacy, and crop-safety**
R. Kanissery, C. McAvoy
University of Florida, USA

**P7.40** **Bioconcentration factor-based soil management guideline through uptake pattern of pesticide by Korean cabbage**
S.Y. Kwak, S.H. Lee, A. Sarker, S.C. Cho, H.J. Kim, H.R. Jeong, J.E. Kim
Kyungpook National University, Korea

**P7.41** **Impact of pesticide pollution in rivers of the Pucara basin in Cochabamba (Bolivia) on benthic macroinvertebrates**
M.M. Álvarez[1], M. Rivero[2], H. Antezana[1], S. Castellón[3], C. Sans[4]
[1]Centro de Aguas y Saneamiento Ambiental (CASA); [2]Unidad de Limnología Recursos Acuáticos (ULRA); [3]Universidad Mayor de San Simón, Bolivia; [4]University of Barcelona, Spain

**P7.42** **Multidimensional modelling of reactive transport of plant protection products underneath vegetated filter strips**
R. Zolfaghari, K. Hammel, R. Sur, D. Schaefer
Bayer AG, Germany

**P7.43** **Vegetative Filter Strip (VFS) modeling in the United States**
A. Ritter[1], D. Desmarteau[1], P. Hendley[2]
[1]Waterborne Environmental Inc., USA; [2]Phasera Ltd, UK

**P7.44** **Using on-farm biopurification systems for the depuration of pesticide-contaminated effluents from agro-food industries**
C. Papazlatani, P. Karas, D.G. Karpouzas
University of Thessaly, Greece

**P7.45** **The use of constructed wetlands and filters for removal of pyraclostrobin from agricultural wastewater**
G.D. Gikas[1], J. Karametos[1], Z. Vryzas[1], V.A. Tsihrintzis[2]
[1]Democritus University of Thrace; [2]National Technical University of Athens, Greece

**P7.46** **Modelling pesticides leaching in cropping systems: Effect of uncertainties in climate, agricultural practices, soil and pesticide properties**
S.K. Lammoglia[1,2], F. Brun[3], T. Quemar[3], J. Moeys[4,5], E. Barriuso[1], B. Gabrielle[1], L. Mamy[1]
[1]ECOSYS, INRA-AgroParisTech-Université Paris-Saclay; [2]CIRAD, SYSTEM; [3]ACTA, France; [4]Swedish University of Agricultural Sciences; [5]Swedish Chemicals Agency, Sweden

**P7.47** **Efam: Automated modeling software for environmental risk assessment**
R. Juraske, P.P. Lenhardt, W. Reiher, T. Hauck
knoell Germany GmbH, Germany

## Posters topic 7
## Environmental fate, transport and metabolism

**P7.48** **Pesticide use data for environmental exposure and risk assessment**
A. Bolekhan[1], K. Szegedi[2], M.A. Thomas[3], B. Jene[2]
[1]Bayer AG; [2]BASF SE, Germany, [3]Bayer U.S., USA

**P7.49** **Developing a MACRO meta-model for Swedish drinking water abstraction zones**
S. Reichenberger[1], M. Gönczi[2], N. Kehrein[1], S. Multsch[1], N.J. Jarvis[2], J. Kreuger[2]
[1]knoell Germany GmbH, Germany; [2]Swedish Agricultural University, Sweden

**P7.50** **Are landscape exposure models any good?**
G.O. Hughes, J. Carnall
Cambridge Environmental Assessments, UK

## Posters topic 8
## Ecosystem and ecological risk assessment

**P8.1** **The effects of pesticide residues on natural enemies (mallada basalis and eocanthecona furcellata) in strawberry pest management**
C.C. Yu, H.P. Wang, J.H. Yen
National Taiwan University, Taiwan

**P8.2** **Water treatment processes and the potential for substances of concern to arise from crop production products**
G. Dean, D.A. Howes
Envigo, UK

**P8.3** **Semi-field study for the honey bee (apis mellifera) using a micro-colony system**
C. Jenkins, K. Barrett, M. Allan, R. Dean
Envigo, UK

**P8.4** **Use of MALDI imaging to assess the distribution of pesticides in the honeybee**
A. McEwen[1], S. Wilkins[1], E. Wright[1], A. Charlton[1], M. Clench[2], J. Lancova[2]
[1]Fera Science Ltd.; [2]Sheffield Hallam University, UK

**P8.6** **The joint effects of pyrethroids Fenvalerate and four other fungicides on Hyalella azteca**
Y.J. Chen, Y.T. Chao, J.H. Yen
National Taiwan University, Taiwan

**P8.7** **Toxic effects of pesticide mixed application on non-target aquatic organisms**
L.Y. Yang, P.C. Chiang, J.H. Yen
National Taiwan University, Taiwan

**P8.8** **Lethal effect of insecticide imidacloprid, chlorpyrifos and azoxystrobin on two sediment ecological indicator species (amphipod and chironomid)**
C.K. Tyan, J.H. Yen
National Taiwan University, Taiwan

**P8.9** **Volatile chemical pesticide - Guideline for earthworm acute toxicity test**
L. Mao, L. Zhang, Y. Zhang, H. Yu, H. Jiang
Chinese Academy of Agricultural Sciences, China

**P8.10** **Mitochondrial dysfunction-based cardiotoxicity and neurotoxicity induced by pyraclostrobin in zebrafish larvae**
H. Li, F. Zhao, F. Cao, M. Teng, Y. Yang, L. Qiu
China Agricultural University, China

**P8.11** **Plant protection products used in Sancti Spíritus, Cuba: Ecotoxic impact**
E. López Dávila[1,2], J. De Rop[2], M. Houbraken[2], O. Romero Romero[1], J. Du Laing[2], P. Spanoghe[2]
[1]Sancti Spíritus University, Cuba; [2]Ghent University, Belgium

**P8.12** **Testing the potential non-target effect of water extracts of invasive alien plants leaves on pollinators and predators in the field with lacy phacelia (Phacelia tanacetifolia Benth.)**
T. Bohinc, F. Vučajnk, S. Trdan
University of Ljubljana, Slovenia

**P8.13** **Mechanistic effect models to predict pesticide stress on Daphnia magna populations – An intermediate tier tool for ecological risk assessment**
K. Vlaeminck[1], K.P.J. Viaene[2], P. Van Sprang[2], K.A.C. De Schamphelaere[1]
[1]Ghent University (UGent); [2]Arche Consulting, Belgium

**P8.14** **Population modelling to assess the effects of a copper pesticide on rainbow trout (Oncorhynchus mykiss)**
S.D. Janssen[1], K.P.J. Viaene[2], P. Van Sprang[2], K.A.C. De Schamphelaere[1]
[1]Ghent University; [2]Arche Consulting, Belgium




## Posters topic 8
## Ecosystem and ecological risk assessment

**P8.15** **In-vitro metabolism studies using fish hepatocytes**
M. Kohler, A. Lagojda, A. Stork, M. Lamshoeft
Bayer AG, Germany

**P8.16** **Impacts of seven insecticides on three natural enemies in the northeastern region of Thailand**
R. Wanna, P. Khangkhun, M. Wongsawas, W. Kaewduangta
Mahasarakham University, Thailand

**P8.17** **Mitochondrial dysfunction, apoptosis and transcrirtomic alterations induced by strobilurins in zebrafish early life stages**
J. Jiang, S. Wu, L. Lv, X. Liu, X. An, X. Zhao, Q. Wang
Zhejiang Academy of Agricultural Sciences, China

**P8.20** **Optimizing laboratory testing for bee species: A comparative sensitivity analysis for honey bees and bumblebees**
A. Dinter[1], J. Lückmann[2], R. Becker[3], M. Miles[4], E. Pilling[5], N. Ruddle[6], A. Sharples[7], L. Oger[8]
[1]FMC Agricultural Solutions; [2]RIFCON GmbH; [3]BASF SE, Germany; [4]Bayer AG; [5]Dow AgroSciences; [6]Syngenta; [7]FMC Agricultural Solutions, UK; [8]ECPA, Belgium

**P8.21** **Estimating neonicotinoid residues in pollinator-attractive habitat by LC-MS/MS**
M.J. Hall, V. Dang, G. Zhang, M. O'Neal, S.P. Bradbury, J.R. Coats
Iowa State University, USA

**P8.22** **A new framework for the assessment of the soil microbial toxicity of pesticides**
D.G. Karpouzas
University of Thessaly, Greece

**P8.23** **Graphical user interface for applying the plant community model IBC-grass in ecological risk assessments**
C. Mihan[1], J. Reeg[2], S. Heine[1], S. McGee[3], T.G. Preuss[1], F. Jeltsch[2]
[1]Bayer AG; [2]University of Potsdam, Germany; [3]Bayer CropScience LP, USA

**P8.24** **Single and joint toxic effects of Isoproturon and cadmium on algae Chlamydomonas reinhardtii**
J. Liu, C.B. Qiu, H. Yang
Nanjing Agricultural University, China

**P8.25** **Supervised field trials within the agrochemical registration process: Conduct of crop field trials and generation of representative field specimens**
E. Ale[1], J. Bartolomé[1], J. Andrés[1], H. Harper[2]
[1]Envigo CRS Ltd., Spain; [2]Envigo CRS Ltd., UK

**P8.26** **Residue determination of florasulam and pyroxsulam in wheat in field trial**
Y. Bi, L. Han, S. Song, W. Yao
China Agricultural University, China

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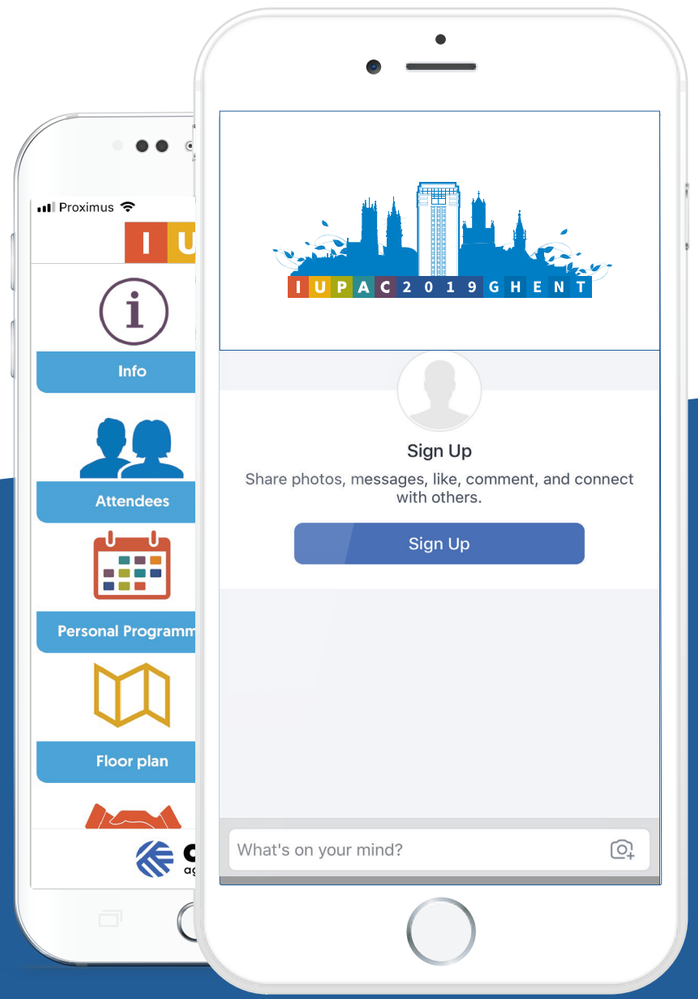


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IUPAC 2019

# PROGRAMME TUESDAY

IUPAC 2019 GHENT

## Programme at a Glance - Tuesday, May 21

| | | Auditorium | Van Rysselberghe Room | Jan Van Eyck Room | Hubert Van Eyck Room | Van der Goes Room | Bauwens Room | Baekeland Room I | Baekeland Room II | Baekeland Room III | Ghislain Room I | Ghislain Room II |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 08.00 | Poster hang-up Presentations upload | | | | | | | | | | | |
| 08.30 | | Plenary Talks M. Höfte P. Marrone | | | | | | | | | | |
| 09.40 | Coffee | | | | | | Coffee | | | | | |
| 10.20 | Parallel Sessions | | 3.2 New chemistries targeting disease control (1/2) | 2.3 Microbial pesticides (1/2) | 7.2 Pesticides mixtures and interactions with other contaminants: environmental fate processes, exposure and risk assessment | 2.6 Weeds, pests, diseases: Monitoring and management | 4.2 Improvement of formulation efficiency (1/2) | 6.1 International trends in food production, food trade, food fraud, food authenticity and novel foods | 9.4 Nematicides: Mode of action and resistance | 7.7 Contribution of abiotic processes (sorption, volatilization, photolysis and hydrolysis) in pesticide dissipation and metabolism | 1.3 21st century stewardship – Exploring the impact of digitalization and precision agriculture | 5.3 Mechanisms of toxicity, criteria setting and harmonized approaches |
| 12.20/12.40 | Lunch | | | | | | Lunch | | | | | |
| 12.45-14.15 | Lunch Workshops | | | Constraints & challenges of the development of novel bio-pesticides | | Biological control, beyond the point of no return | | | | What in the world is IUPAC, really? | | |
| 13.00 | Poster Sessions | Poster Presentations of Topics 2, 6 and 9 | | | | | Poster Presentations of Topics 2, 6 and 9 | | | | | |
| 14.15 | | | | | Poster Award Ceremony (Topics 1, 5, 7 & 8) | | | | | | | |
| 14.30-16.30 | Parallel Sessions | | 3.2 New chemistries targeting disease control (2/2) | 2.3 Microbial pesticides (2/2) | 7.8 Bioavailability & bioaccumulation of pesticides: their role in the environmental fate of pesticides | 2.4 Biocontrol agents and 2.8 Technologies based on insect behavior | 4.3 Improvement of formulation efficiency (2/2) | 6.3 Modern analytical techniques to detect and control residues in food and feed (2/3) | 9.5 Genome based technologies in MoA and resistance research | | 1.4 New paradigms in regulatory decision making | |
| 16.30 | Coffee | | | | | | Coffee | | | | | |
| 17.00-18.00 | Debate | Farming in 10, 20 and 30 years | | | | | | | | | | |

## Plenary Talks

08.30 **Cyclic lipopeptides: versatile molecules for plant disease control**
Monica Höfte, Ghent University, Belgium

09.05 **History, status and potential of natural products for pest management and plant health?**
Pam Marrone, Marrone Bio Innovations Inc., USA

09.40-10.20 Coffee Break

10.20-12.20/40 **Parallel Sessions**

12.20-14.30 Lunch, Lunch Workshops & Poster Session

14.30-16.30 **Parallel Sessions**

16.30-17.00 Coffee Break

17.00-18.00 **Debate**

**Farming in 10, 20 and 30 years**
Eduardo Cuoco, IFOAM Europe, Belgium
Rajan Gajaria, Corteva Agriscience, USA
Jannes Maes, CEJA, Belgium
Danny Van Quaethem, Econopolis, Belgium





## 3.2 New chemistries targeting disease control (I)

**Chairs:** Peter Maienfisch, Syngenta Crop Protection AG, Switzerland &
Najam Shakil, Indian Agricultural Research Institute, India

10.20 3.2.1 **Discovery of ADEPIDYNTM**
C. Lamberth, Syngenta Crop Protection AG, Switzerland

10.40 3.2.2 **Isoflucypram – A new succinate dehydrogenase inhibitor with unique structural features and performance**
M. Maue, Bayer AG, Germany

11.00 3.2.3 **Discovery of inpyrfluxam**
S. Kiguchi, Sumitomo Chemical Co., Japan

11.20 3.2.4 **Isoflucypram – An innovative disease management tool with an unprecedented biological performance**
A. Goertz, Bayer AG, Germany

11.40 3.2.5 **Isofetamid: Discovery and optimization of a novel fungicide**
T. Yoneda, Ishihara Sangyo Kaisha Ltd, Japan

12.00 3.2.6 **Discovery of a new class of highly active fungicides to control rust diseases**
C. Winter, BASF SE, Germany

12.20-14.30 Lunch, Lunch Workshops and Poster Session

## 3.2 New chemistries targeting disease control (II)

**Chairs:** Changling Liu, Sinochem International Corporation, China &
Clemens Lamberth, Syngenta Crop Protection AG, Switzerland

14.30 3.2.7 **Discovery and biological profile of metyltetraprole**
Y. Matsuzaki, Sumitomo Chemical Co, Japan

14.50 3.2.8 **Discovery of florylpicoxamid, a new picolinamide for disease control**
K.G. Meyer, Corteva Agriscience, USA

15.10 3.2.9 **Revysol®: The new broad-spectrum fungicide of BASF SE**
M. Semar, BASF SE, Gerrmany

15.30 3.2.10 **Synthesis and fungicidal activity of novel types of oxysterol-binding protein inhibitors**
S. Sulzer, Syngenta Crop Protection AG, Switzerland

15.50 3.2.11 **Azole carbinols as fungicides**
J.K. Long, FMC Stine Research Center, USA

16.10 3.2.12 **Discovery of pyruvate kinase as a fungicide target by DARTS**
B. Zhao, Nankai University, China

16.30-17.00 Coffee Break

## 2.3 Microbial pesticides (I)

**Chair:** Stephen Duke, USDA, USA

10.20 2.3.1 **Myxomycetes: Bizarre organisms with astonishing antagonistic activity against plant-pathogenic fungi and bacteria**
M. Lemmens, University of Natural Resources and Life Sciences, Austria

10.40 2.3.2 **Screening of Pseudomonas sp. strains for the biocontrol of Septoria tritici blotch of wheat**
A. Bricout, Université Lille, France

11.00 2.3.3 **Breakdown of resistance to Plasmopara viticola, causal agent of grapevine downy mildew, and potential of pseudomonas cyclic lipopeptides in its biocontrol**
L. Heyman, Ghent University, Belgium

11.20 2.3.4 **Diversity and biological activity of cyclic lipopeptide-producing Bacillus spp isolated from the rice rhizosphere in acid sulphate soils in Vietnam**
V.B. Lam, Ghent University, Belgium

11.40 2.3.5 **Binding proteins in fungal peptide Destruxin A in silkworm Bm12 cell**
J. Wang, South China Agricultural University, China

12.00 2.3.6 **Bacillus firmus I-1582 protects plants from Heterodera schachtii**
A.S.S. Schleker, University of Bonn, Germany

12.20 2.3.7 **Enhanced microbial pesticides via rainfastness and UV resistance improvement**
C. Woelfle-Gupta, The Dow Chemical Company, United States

12.40-14.30 Lunch, Lunch Workshops and Poster Session

12.45-14.15 **Lunch Workshop**
**Constraints and challenges of the development of novel bio-pesticides**
**Organisers:** Philippe Jacques (ULiège-Gembloux Agro-BioTech, project BIOCOMGEST), François Krier (ULille, project BIOPROD), Jenny Neukermans (PCG, project BIOPROTECT), Sylvain Desprez (Materia Nova, project BIOSENS), Essaïd Ait Barka (UReims, project BIOSCREEN)

## 2.3 Microbial pesticides (II)

**Chair:** Emilia Markellou, Benaki Phytopathological Institute, Greece

14.30 2.3.8 **Bioact DC (Purpureocillium lilacinum strain 251) - A complementary tool for integrated nematode management in vegetable crops**
M. Tarver, Bayer AG, Germany

14.50 2.3.9 **Methods evaluation to differentiate presumptive B. cereus on lettuce**
T. De Bock, Ghent University, Belgium

15.10 2.3.10 **Evaluation and identification of suitable co-formulants for biopesticides**
D. Zweifel, Dow Europe GmbH, Austria

15.30 2.3.11 **Velifer®: BASF's new bioinsecticide**
B. Liebmann, BASF SE, Germany

15.50 2.3.12 **Trichoderma atroviride strain SC1 controls Botrytis in tomatoes**
A. Vermaete, BI-PA nv, Belgium

16.10 2.3.13 **Efficacy of indigenous entomopathogenic fungi on the control of the tomato leafminer Tuta absoluta (Meyrick)**
A.M.A. Hammad, University of Khartoum, Sudan

16.30-17.00 Coffee Break





## 7.2 Pesticides mixtures and interactions with other contaminants: environmental fate processes, exposure and risk assessment

**Chairs:** Jay Gan, University of California, USA & George Cobb, Baylor University, USA

10.20 7.2.1 **Pesticides and emerging contaminants in coastal sediments: Wastewater discharge as a source**
J. Gan, University of California, USA

10.40 7.2.2 **Effect of phosphate fertilizers application on the mineralization and mobility of glyphosate in three Colombian soils**
M.Y. Dotor Robayo, Universidad Nacional de Colombia, Colombia

11.00 7.2.3 **Impact of Cu (II) on herbicide mesotrione fate in various soils**
P. Besse-Hoggan, Université Clermont Auvergne, France

11.20 7.2.4 **Nanometal oxide fungicide influences rice (Oryza sativa japonica) growth and arsenic uptake**
G. Cobb, Baylor University, USA

11.40 Discussion

14.15 **Poster Award Ceremony**
Announcement of the poster award winners in topics 1, 5, 7 & 8.

12.00-14.30 Lunch, Lunch Workshops and Poster Session

## 7.8 Bioavailability and bioaccumulation of pesticides: Their role in the environmental fate of pesticides

**Chairs:** Zisis Vryzas, Democritus University of Thrace, Greece & Horatio Heinzen, Universidad de la República, Uruguay

14.30 7.8.1 **Pesticide accumulation in non-target organisms and their role as sentinels of pesticide residues in the environment**
H. Heinzen, Universidad de la República, Uruguay

15.10 7.8.2 **Comparison of EPA and ECHA guidance on characterization of non-extractable residues (NER) in degradation assessment**
K. Malekani, Smithers Viscient, USA

15.30 7.8.3 **Setting criteria for triggering aged sorption studies to support discovery projects**
K.J. Lynn, Corteva Agrisciences, USA

15.50 7.8.4 **Development of a small scale compost degradation assay for discovery herbicide screening**
K.J. Lynn, Corteva Agriscience, USA

16.10 Discussion

16.30-17.00 Coffee Break

## 2.6 Weeds, pests, diseases: Monitoring and management

**Chair:** Raf De Vis, Proefstation voor de Groenteteelt, Belgium

10.20 2.6.1 **Fusarium wilt threatens Belgian lettuce production**
J. Claerbout, Ghent University, Belgium

10.40 2.6.2 **Hyperspectral classification of yellow nutsedge and morphologically similar weeds and toxic weeds in vegetable crops**
M. Lauwers, Ghent University, Belgium

11.00 2.6.3 **Simulating the population growth, dispersal and effect of control measures on potential outbreaks of Anoplophora spp. in Belgium**
J. Bonte, Flanders Research Institute for Agriculture, Belgium

11.20 2.6.4 **Focus on biological preparation of SPR sensors - Project BIOSENS, the development of early detection and real-time monitoring of pathogens and biocontrol agents in agriculture**
C. Dekuijper, Haute Ecole Provinciale de Hainaut-Condorcet, Belgium

11.40 2.6.5 **Comparison of different fungicide application criteria based on Cercospora leaf spot development and Cercospora beticola spore flight**
F. Imbusch, Institute of Sugar Beet Research, Germany

12.00 2.6.6 **Thermal responses of three mealybug pests of ornamental crops in Flanders**
L. Golsteyn, Ghent University, Belgium

12.20-14.30 Lunch, Lunch Workshops and Poster Session

12.45-14.15 **Lunch Workshop**
**Biological control, beyond the point of no return**
**Organisers:** Sarah Van Beneden, Soraya França, Lieselotte De Bruyne, Rob Moerkens, Felix Wäckers (Biobest Group, Westerlo, Belgium)

## 2.4 Biocontrol agents and 2.8 Technologies based on insect behavior

**Chair:** Jozef Vanden Broeck, KU Leuven, Belgium

14.30 2.4.1 **Entomopathogenic nematodes for the control of sciarids in mushroom cultivation**
K. Gheysens, Inagro vzw, Belgium

14.50 2.4.2 **The potential of the ant crematogaster scutellaris as biological control agent of the western flower thrips, Frankliniella occidentalis**
C. Noppe, Ghent University, Belgium

15.10 2.4.3 **Innovative tools to improve biological control of aphids: Development of a parasitoid attracting feeding device based on microbial infochemicals**
T. Goelen, KU Leuven, Belgium

15.30 2.8.1 **Nanofibers contributing to innovative push-and-pull strategies for control of fruit tree phytoplasma vectors**
B.C. De Jorge, Julius Kühn-Institut, Germany

15.50 2.8.2 **Seasonal changes in choice preference and oviposition behaviour of Spotted Wing Drosophila (SWD), and its impact on 'Attract-and-Kill' strategies**
T. Beliën, pcfruit, Belgium

16.10 2.4.4 **Biological control of aphids on urban trees**
A. De Roissart, University College Ghent, Belgium

16.30-17.00 Coffee Break





## 4.2 Improvement of formulation efficiency (I)

**Chair:** Christian Popp, Syngenta Crop Protection, Switzerland

10.20 4.2.1 **Influence of leaf surface structure on wetting and droplet impaction**
P. Taylor, Syngenta, UK

10.40 4.2.2 **Image analysis of water-based droplets impacting on plant leaf surfaces**
O.D. Huet, Queensland University of Technology, Australia

11.00 4.2.3 **Spray characterization to optimize insecticide performance**
H. Jeon, Corteva Agriscience, United States

11.20 4.2.4 **Interaction of adjuvants and reduced spray volume on fungicide efficiency in irrigated rice**
I.S.N. Dario, São Paulo State University, Brazil

11.40 4.2.5 **Drying of agrochemical droplets on model surfaces: co-localisation of active ingredient and adjuvant**
C. Bain, Durham University, UK

12.00-14.30 Lunch, Lunch Workshops and Poster Session

## 4.3 Improvement of formulation efficiency (II)

**Chair:** Per Kudsk, Aarhus University, Denmark

14.30 4.3.1 **Product optimization – Managing active ingredient and product properties in formulation development**
M. Bratz, BASF SE, Germany

14.50 4.3.2 **A novel formulation concept of Fox Xpro**
E. Hilz, Bayer AG, Germany

15.10 4.3.3 **Dow silicone antifoams and superwetters, adjuvants used to enhance actives effectiveness and ease of use**
E. Raynaud, Dow Silicones, Belgium

15.30 4.3.4 **Foliar spray quality – Do not overlook the impact on biological efficacy!**
A. Buchholz, Syngenta Crop Protection, Switzerland

15.50 4.3.5 **Novel benign and sustainable adjuvant delivery systems for agrochemicals and biosolutions**
R. Haensel and C. Riedl, Evonik Industries AG, Germany

16.10 4.3.6 **Development of optimal solvent, surfactant packages for emulsion stability using high throughput techniques**
M.P. Tate, The Dow Chemical Company, USA

16.30 4.3.7 **Simulating droplet impaction outcomes: Comparison with experimental data**
J. A. Zabkiewicz, SciCon Scientific Consultants Ltd, New Zealand

16.30-17.00 Coffee Break

## 6.1 International trends in food production, food trade, food fraud, food authenticity and novel foods

**Chairs:** Liesbeth Jacxsens, Ghent University, Belgium & Britt Maestroni, FAO/IAEA, Austria

10.20 6.1.1 **New challenges in food safety management across agro-food chain**
P. Luning, Wageningen University, the Netherlands

10.40 6.1.2 **EU Knowledge Centre for Food Fraud and Quality: A technical platform to coordinate actions and harmonise tools**
A. Maquet, European Commission

11.00 6.1.3 **Countering (organic) fraud through non-analytical supply chain balancing**
G. Hermann, Organic Services, Germany

11.20 6.1.4 **Low residue cropping in lettuce, cucumber and leek**
S. Pollet, Inagro, Belgium

11.40 6.1.5 **The use of stable isotope ratios of vegetables and soils for the authentication of organic production from almeria farms**
J. M. Moreno-Rojas, Andalusian Institute of Agricultural and Fisheries Research and Training, Spain

12.00 6.1.6 **Testing strategies for organic fruit juices with focus on the stabile isotope profile of nitrogen (N15/14)**
P. Rinke, SGF International e.v., Germany

12.20-14.30 Lunch, Lunch Workshops and Poster Session

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## 6.3 Modern analytical techniques to detect and control residues in food and feed (II)

**Chairs:** Veronica Cesio, GACT, Uruguay & Britt Maestroni, FAO/IAEA, Austria

14.30 6.3.7 **Assessment of exposure to pesticides: Residues in 24h duplicate diet versus their biomarkers in 24h urine**
H. Mol, RIKILT – Wageningen University and Research, The Netherlands

15.10 6.3.8 **Wide-scope pesticide residues and contaminants in cereal-based infant formulas**
M.R. Repetti, Universidad Nacional del Litoral, Argentina

15.25 6.3.9 **Novel sample preparation approach for the determination of organophosphorus pesticides in strawberries, using GC-FPD and confirmation by GC-MS and GC-MS/MS**
V.C. Fernandes, Instituto Superior de Engenharia do Porto, Portugal

15.40 6.3.10 **The Radiokitchen – Tracing Radiolabeled Pesticides to Investigate their Fate during Food Processing**
B. Göckener, Fraunhofer Institute for Molecular Biology and Applied Ecology IME, Germany

15.55 6.3.11 **Crop Metabolism to Crop Trials: why conduct radiovalidation?**
A. Crowe, Envigo, UK

16.10 6.3.12 **Eco-friendly crop protection product development**
H. Shao, Corteva Agriscience, USA

16.30-17.00 Coffee Break





BAYER

## 9.4 Nematicides: Mode of action and resistance

**Chairs:** Wim Wesemael, ILVO, Belgium & Lindy Holden-Dye, University of Southampton, UK

10.20 9.4.1 **Serotonin signalling in plant parasitic nematodes provides new routes to crop protection**
L. Holden-Dye, University of Southampton, UK

11.00 9.4.2 **Investigating the metabolic integrity of G. Pallida juveniles following fluensulfone exposure**
E. Feist, University of Southampton, UK

11.20 9.4.3 **Nematicidal or nematistatic! Mode of action of fluopyram in plant-parasitic nematodes**
M. Rist, Bayer AG, Germany

11.40 9.4.4 **Nematode acetylcholine receptors as a model target for the mode of action of natural insecticides**
C.R. Wong, Iowa State University, USA

12.00-14.30 Lunch, Lunch Workshops and Poster Session

BAYER

## 9.5 Genome based technologies in MoA and resistance research

**Chairs:** Thomas Van Leeuwen, Ghent University, Belgium &
Andrew Crossthwaite, Syngenta Crop Protection, UK

14.30 9.5.1 **A Retrospective on Mode of Action Diagnosis and the Impact of New Technologies**
F.G. Earley, Syngenta, UK

15.10 9.5.2 **High resolution QTL mapping reveals parallel and divergent selection responses to different METI-I acaricides in Tetranychus urticae**
S. Snoeck, Ghent University, Belgium

15.30 9.5.3 **Two case studies on a quantum chemical approach to elucidation and exploration of modes of binding: Why Prothioconazole is not an azole, and what discriminates nicotine from neonicotinoids**
M.E. Beck, Bayer AG, Germany

15.50 9.5.4 **A computational predictive approach to address target specific resistance to pesticides**
B. Inbal, agPlenus Ltd., Israel

16.10 9.5.5 **Plant Resistance-Based Novel Agrochemical Development and its Mode of Action**
Z. Fan, Nankai University, China

16.30-17.00 Coffee Break

## 7.7 Contribution of abiotic processes (sorption, volatilization, photolysis and hydrolysis) in pesticide dissipation and metabolism

**Chairs:** Claire Richard, CNRS, France & Erik van den Berg, Wageningen University, The Netherlands

10.20 7.7.1 **Pesticide dissipation in the environment: emission into the atmosphere, sorption, abiotic degradation**
C. Bedos, INRA-AgroParisTech-Université Paris-Saclay, France

11.00 7.7.2 **Comparison of soil photolysis in dry and moist soil layers**
T. Cooper, Smithers Viscient, UK

11.20 7.7.3 **Viticulture fungicides wash-off from foliar surfaces: Laboratory-scale test system to derive relative wash-off factors**
V. Gourlay, RLP AgroScience GmbH, Germany

11.40 7.7.4 **Experimental data on plant uptake for regulatory environmental fate modelling**
C. Schriever, BASF SE, Germany

12.00 7.7.5 **Characterizing volatile photoproducts of pesticides on plant surfaces**
M. Sleiman, Université Clermont Auvergne, France

12.20-14.30 Lunch, Lunch Workshops and Poster Session

12.45-14.15 **Lunch Workshop**

**What in the world is IUPAC, really?**
**Organisers:** Laura McConnell (Bayer & Former Division President, IUPAC Division VI), Rai Kookana (CSIRO & Current Division President, IUPAC Division VI), and John Unsworth (Chair, IUPAC Committee on Crop Protection Chemistry)





## 1.3 21st century stewardship – Exploring the impact of digitalization and precision agriculture

**Chairs:** Patricia Rice, BASF, USA & Klaus Kunz, Bayer AG, Germany

10.20 Opening remarks
P. Rice, BASF, USA

10.40 1.3.1 **Digital agriculture: Producing more with less in a sustainable way**
D. Schaefer, Bayer AG, Germany

11.00 1.3.2 **Application of web-based technologies to advance pesticide stewardship**
C.G. Hoogeweg, Waterborne Environmental, USA

11.20 1.3.3 **Can on-line measurement accuracy of soil properties be improved by means of hybrid laboratory and on-line vis-NIR scanned spectra?**
M.A. Munnaf, Ghent University, Belgium

11.40 1.3.4 **Improving management zones performance for variable rate nitrogen fertilization in cereal crops based on fusion of high resolution data layers**
S. Nawar, Ghent University, Belgium

12.00 1.3.5 **The use of the hydraulic profiling tool to support elucidation of groundwater detections of plant protection products**
J.D.C. White, Arcadis UK Ltd., UK

12.20 1.3.6 **Digital farming – What does it mean for the plant protection product uses and the approval process?**
M.F. Schäfer, BASF, Germany

12.20-14.30 Lunch, Lunch Workshops and Poster Session

## 1.4 New paradigms in regulatory decision making

**Chair:** Christoph Neumann, CropLife International, Belgium

14.30 Opening remarks
C. Neumann, CropLife International, Belgium

14.45 1.4.1 **Plant protection product regulations – How does the future look like?**
C. Alonso Alija, Bayer AG, Germany

15.00 1.4.2 **Policy convergence or policy interference?... Africa's gain and pain in current regulation of crop protection products**
S. N. Simiyu, CropLife Africa Middle East, Kenya

15.15 1.4.3 **Harmonization of Technical Guidelines for Pesticide Management in ASEAN**
W. Meyer, CropLife, Belgium

15.30 1.4.4 **Facing up and meeting the regulatory challenges and obligations in our shift from reliance on chemistry to a shared reliance with other IPM measures for sustainable plant protection**
I. Pinzauti Babrzynski, IBMA, Belgium

15.45 1.4.5 **Implementation of a globally harmonized risk assessment-based approach for regulatory decision-making of crop protection products**
D.C. Wolf, Syngenta, USA

16.00 1.4.6 **The Innovation Principle, an important new framework for policymakers, society & the environment**
P.K. Leonard, European Risk Forum, Belgium

16.30-17.00 Coffee Break

## 5.3 Mechanisms of toxicity, criteria setting and harmonized approaches

**Chairs:** Philip Marx-Stölting, German Federal Institute for Risk Assessment, Germany &
Kiki Machera, Benaki Phytopathological Institute, Greece

10.20 5.3.1 **(Q)SAR tools for prediction of mutagenic properties – Are they ready for application in pesticide regulation?**
K. Herrmann, German Federal Institute for Risk Assessment, Germany

10.40 5.3.2 **Metabolism of 14c-ipconazole in the rat**
L. Knight, Envigo, UK

11.00 5.3.3 **Screening of 348 plant protection products and 96 biocidal products for the identification of endocrine disruptors in the context of impact assessment**
E.S. Katsanou, Benaki Phytopathological Institute, Greece

11.20 5.3.4 **Development of a testing strategy to reduce animal testing in eu plant protection product hazard and risk assessment**
D. Kurth, German Federal Institute for Risk Assessment, Germany

11.40 5.3.5 **Source to outcome approach for inhalation risk assessment**
D.C. Wolf, Syngenta Crop Protection LLC, UK

12.00 Discussion

12.20-14.30 Lunch, Lunch Workshops and Poster Session

POSTERS
TUESDAY
IUPAC 2019 GHENT

## Posters topic 2
## ISCP - Novel agricultural technologies

**P2.1** **RNA-based biocontrols: An industry perspective**

W. Maddelein[1], D. Ackland[2], M. Seymour[2], R. Dominguez-Espinosa[2], G. Plaetinck[1], M. Bean[1]
[1]Syngenta, Belgium; [2]Syngenta, UK


**P2.2** **RNAI as a lethal mechanism to control Colorado potato beetle**

L. Rüßmann[1,3], S. Mehlhorn[2,3], J. Ulrich[2,3], S. Geibel[3], R. Nauen[3]
[1]Heinrich-Heine-University Düsseldorf; [2]University of Göttingen; [3]Bayer AG, Germany


**P2.3** **Study of O-glycosylation related genes in development of Tribolium castaneum**

W. Li, K. De Schutter, E.J.M. Van Damme, G. Smagghe
Ghent University, Belgium


**P2.5** **The promising potential of zein nanoparticles loaded with neem oil to be used in sustainable agriculture**

M. Pascoli[1], M. Tavares Jacques[2]; D. Araujo Agarrayua[2], A. Kikuchi Calzavara[3], F. Pereira de Albuquerque[1], B. Tinoco-Nunes[1], W. Henrique Cruz Oliveira[1], D. Silva Ávila[2], H. Caixeta de Oliveira[3], J. Augusto Souza-Neto[1], R. de Lima[4], L. Fernandes Fraceto[1]
[1]São Paulo State University; [2]Federal University of Pampa; [3]Londrina State University; [4]University of Sorocaba, Brazil


**P2.6** **Development and evaluation of biogenic metal nanoparticles (silver, titanium and iron) based on Trichoderma Harzianum for agricultural application**

M. Guilger[1], N. Bilesky-José[1], T. Stigliani-Pasquoto[1], L.F. Fraceto, R. Lima[1]
[1]University of Sorocaba; [2]UNESP, Brazil


**P2.7** **Aphicidal potential of green synthesized magnesium oxide nanoparticles using Chamaemelum nobile flowers extract**

A.Y. Ghidan[1], T.M. Al Antary[1], A.M. Awwad[2], O.Y. Ghidan[3]
[1]University of Jordan, Jordan; [2]Royal Scientific Society; [3]Chemistry Technologist, Australia


**P2.8** **Status of R&D and manufacturing of biopesticides and biostimulants in India**

B. Saha
NACL Industries Limited, India


**P2.9** **Combining biologicals with chemistry: Determining tangible benefits**

E. Smetanova, P. Le Vieux, D. Neethling, B. Liebmann
BASF SE, Germany


**P2.10** **Reduction of Fusarium head blight in common wheat and durum wheat protected biologically with Aureobasidium pullulans, Debaryomyces hansenii and Rhodotorula glutinis**

U. Wachowska[1], M. Wiwart[1], E. Suchowilska[1], M. Combrzyński[2,3], D. Gontarz[2]
[1]University of Warmia and Mazury in Olsztyn; [2]PZZ Lubella GMW Sp. z o.o. Sp.k.; [3]University of Life Sciences in Lublin, Poland


**P2.11** **Endophytic entomopathogenic fungi and host plant interactions: Impact on phytovirus transmission by insect vector**

J.C. Fingu Mabola, F. Francis
University of Liège, Belgium


**P2.12** **Investigating the mode of action of Pseudomonas cyclic lipopeptides in inducing systemic resistance in plants**

E. Ferrarini[1], B. De Coninck[2], M. Höfte[1]
[1]Ghent University; [2]KU Leuven, Belgium


**P2.13** **Deep characterization of apple fruit epiphytic microbiome in Belgium for sustainable agriculture**

A.R. Sare, M. H. Jijakli, S. Massart
University of Liège, Belgium

## Posters topic 2
## ISCP - Novel agricultural technologies

**P2.14** **Beauveria bassiana in polymeric microparticles for the control of Sphenophorus levis**
R.A. Polanczyk, G. Smaniotto, J.P. Soares, J.L. de Oliveira, L.F. Fraceto
São Paulo State University, Brazil

**P2.15** **Lipopeptides produced by Bacillus subtilis as new biocontrol agent against fusariosis in ornemental plants**
F. Krier[1], G. Mihalache[2], T. Balaes[2], I. Gostin[2], M. Stefan[2], F. Coutte[1]
[1]University of Lille, France; [2]The Alexandru Ioan Cuza University of Iasi, Romania

**P2.16** **Efficacy of entomophatogenic fungi Bauveria bassiana against Thrips tabaci in leek**
M. Pobozniak, D. Grabowska
University of Agriculture, Poland

**P2.17** **Potential use of Bauveria bassiana for biological control of Thrips tabaci in onion**
M. Pobozniak, D. Grabowska
University of Agriculture, Poland

**P2.18** **Biological control of aphids on urban trees**
A. De Roissart, J. Moens
University College Ghent, Belgium

**P2.19** **The impact of the surrounding environment and management system in apple orchards on the structure of predatory coccinellids (coleoptera, coccinellidae)**
E. Wojciechowicz-Żytko, E. Wilk
Agricultural University, Poland

**P2.20** **Effect of microbial consortia from soil and irrigation water on lettuce seedlings, in Colombia**
L.C. Sanchez Leal, M. L. Posada Buitrago, R.P. Diaz, S.V. Benitez Hernandez, L.C. Corrales Ramirez, J.G. Betancourt Bernal
Colegio Mayor de Cundinamarca University, Colombia

**P2.21** **Potato scab complex disease: Causal agents and their pathogenicity factors, annual crop losses and its safe control**
G. Khodakaramian
Bu-Ali Sina University, Iran

**P2.22** **Fast and reliable quantification of Verticillium dahliae microsclerotia in soil**
J. Debode[1], L. Willaert[2], F. Focquet[1], M. Heupel[3], K. Heungens[1]
[1]Flanders Research Institute for Agriculture; [2]Inagro, Belgium; [3]Landwirtschaftskammer Nordrhein-Westfalen, Germany

**P2.23** **Integrated management of pepper under greenhouse by combination of insecticide and resistance inducer (Cyantraniliprole/Acibenzolar-S-Methyl) for virus and related vector control**
A. Fanigliulo[1], D. Spaccatrosi[2], N. Prencipe[2], A. Crescenzi[3]
[1]Bioagritest Srl Centro Interregionale di Diagnosi Vegetale; [2]Syngenta Italia Spa; [3]Scuola di Scienze Agrarie, Italy

**P2.24** **The N-glycan profile of the peritrophic matrix in the Colorado potato beetle (Leptinotarsa decemlineata)**
D. Liu[1], K. De Schutter[1], N. Smargiasso[1], E. De Pauw[2], E.J.M. Van Damme[1], G. Smagghe[1]
[1]Ghent University; [2]University of Liège, Belgium

**P2.25** **Mycotoxin contamination of apple fruits infected by fusarium spp.**
M. Petreš[1], M. Grahovac[1], A. Obradović[2], S. Stanković[2], M. Loc[1], J. Hrustić[3], M. Mihajlović[3]
[1]University of Novi Sad; [2]Maize Research Institute; [3]Institute of Pesticides and Environmental Protection, Serbia

**P2.26** **Rapid diagnosis of herbicidal activity using infrared thermal image analysis**
D.S. Kim, T.K. Noh, S.H. Park, J.H. Boo, H.R. Kim
Seoul National University, Korea

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## ISCP - Novel agricultural technologies

**P2.27** **Comparative genomics of 20 rhizogenic Agrobacteria isolated from hydroponic tomato greenhouses**
P. Vargas[1], L. Bosmans[1], S. Van Kerckhove[2], W. Vanlommel[3], B. Van Calenberge[4], B. Lievens[1], H. Rediers[1]
[1]KU Leuven; [2]Scientia Terrae; [3]Proefcentrum Hoogstraten; [4]Proefstation voor de Groenteteelt, Belgium

**P2.28** **SYTRANSPOM: Development of collaborative and innovative alert and decision systems promoting integrated protection against fungal potato diseases**
J. Rivière[1], B. Demey[2], P. Vanhaverbeke[3], K. Cornelissen[3], K. Demeulemeester[4], D. Hannon[5], R. Valade[5], D. Gaucher[5], O. Mahieu[2], D. Lanterbecq[1,2]
[1]Haute école provinciale de Hainaut-Condorcet; [2]Centre pour l'agronomie et l'agro-industrie de la province du Hainaut; [3]Interprovincial Proefcentrum voor Aardappelteelt vzw ; [4]Inagro, Belgium; [5]Arvalis, France

**P2.29** **Effect of different management alternatives for the control of fusarium head blight in wheat and its relationship with the MRL**
C. Palladino[1], C. Francia[2], L. Martella[2], M. Passarino[2], C. Pérez[2], L. Pareja[3]
[1]Polo de Desarrollo Universitario Abordaje Holístico Impactos de los Agroquímicos; [2]EEMAC; [3]CENUR Litoral Norte, Uruguay

**P2.30** **Protective effect of essential oils on the mycotoxins production and wheat kernels germination**
E. Alexa, R. Sumalan, M. Negrea, V. Bota
Banat's University of Agricultural Sciences and Veterinary Medicine, Romania

**P2.31** **Botanical compounds and crop protection: In vitro evaluation of biofungicidal activity of 3 biocontrol products**
V. Destombes, C. Deweer, J. Jacquin, J. Muchembled
Charles Viollette Research Institute, France

**P2.32** **In vitro activities of hop extracts against phytophthora infestans and characterization of their metabolites**
J. Jacquin, N. Bonneau, C. Deweer, L. Bocquet, C. Dermont, S. Bordage, P. Halama, S. Sahpaz, J. Muchembled, C. Rivière, J.L. Hilbert
Charles Viollette Research Institute, France

**P2.33** **COS-OGA, a versatile tool for both organic and integrated control of plant diseases**
G. van Aubel[1,2], R. Buonatesta[1], S. Moreau[2], P. Van Cutsem[1,2]
[1]Fytofend; [2]University of Namur, Belgium

**P2.34** **The effects of different combinations of products mineral on the primary potato diseases and pests and on the yield of tubers**
S. Trdan, F. Vučajnk, T. Bohinc
University of Ljubljana, Slovenia

**P2.35** **New and scalable access to Karrikin and evaluation of its potential application on corn germination**
M. Lachia, A. Lumbroso, R. Fonné-Pfister, C. Screpanti, S. Rendine, P. Renold, D. Witmer, E. Godineau, D. Hueber, A. De Mesmaeker
Syngenta Crop Protection AG, Switzerland

**P2.36** **Insect antifeedants from trichomes on yacon (Smallanthus sonchifolius) leaves**
M. Morimoto, K. Tsunaki, K. Matsuda
Kindai University, Japan

**P2.37** **Comparative study of plant innate immunity in monocots and dicots after elicitation with COS-OGA**
S. Moreau[1], G. van Aubel[2], P. Van Cutsem[1]
[1]University of Namur; [2]Fytofend, Belgium

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**P2.38** **Natural substances for crop protection: Comparing the path for registration in Europe, Canada and USA**
J.J. Carvalho[1], B. De Winter[2], P. Kabouw[3], A. Taya[4], C. Legue[5], L. Ramaekers[6]
[1]knoell Germany GmbH, Germany; [2]DCM, Belgium; [3]BASF, Germany; [4]STK Bio-Ag Technologies, Israel; [5]Bayer SAS, France; [6]Arysta LifeScience, Belgium

**P2.39** **Resistant to late blight disease in potato cultivars induces my monopotassium phosphite**
N. Najdabbasi[1,2], K. Dewitte[1], S.M. Mirmajlessi[1], M. Mänd[2], K. Audenaert[1], G. Haesaert[1]
[1]Ghent University, Belgium; [2]Estonian University of Life Sciences, Estonia

**P2.40** **Stress hormone responses caused by mites in raspberry and azalea**
L. Leus[1], J. Witters[1], J. Van Huylenbroeck[1], E. Pauwels[2], C. Van Poucke[3], G. Luypaert[1], J. Audenaert[2]
[1]ILVO; [2]PCS; [3]ILVO, Belgium

**P2.41** **Evaluation of Melia volkensii as a potential biopesticide against the African sweet potato weevil, cylas puncticollis**
V. Jaoko[1], C.N.T. Taning[1], S. Backx[2], J. Mulatya[3], J. Vandenabeele[4], F. Olubayo[5], S. Mangelinckx[2], S. Werbouck[1], G. Smagghe[1]
[1]Ghent University; [2]Ghent University, Belgium; [3]Kenya Forestry Research Institute; [4]Better Globe Forestry; [5]University of Nairobi, Kenya

**P2.42** **Potential of essential oils from piper nigrum against cowpea weevil**
R. Wanna[1], P. Kwang-Ngoen[2]
[1]Mahasarakham University; [2]Chiang Mai University, Thailand

**P2.43** **Ovipositional inhibition of essential oil from pepper and Diade against cowpea weevil**
R. Wanna[1], P. Kwang-Ngoen[2]
[1]Mahasarakham University; [2]Chiang Mai University, Thailand

**P2.44** **Reynoutria sachalinensis plant formulation triggers resistance in various squash genotypes against Podosphaera xanthii through priming of defense responses**
T. Margaritopoulou, D. Kizis, K.-E. Vichou, E. Markellou
Benaki Phytopathological Institute, Greece

**P2.45** **Screening of new biosourced molecules as biocontrol agents against wheat powdery mildew**
N. Raouani, B. Tisserant, M. Magnin-Robert, B. Randoux, J. Fontaine, A. Lounès-Hadj Sahraoui, Ph. Reignault
Université Littoral Côte d'Opale, France

**P2.46** **Two fatty acids isolated from itchgrass (Rottboellia cochinchinensis) as plant growth inhibitor**
A. Bundit[1], T. Pornprom[2], K. Yamada[3], H. Shigemori[3]
[1]Chiang Mai University; [2]Kasetsart University, Thailand; [3]University of Tsukuba, Japan

**P2.47** **Radical scavenging activity, chemical composition and physico-chemical analyses of essential oils in combination**
F. Milano, L. Donnarumma
CREA, Italy

**P2.49** **The effect of selected preparations on the healthiness of parsley roots (Petroselinum crispum var. Tuberosum)**
J. Nawrocki, M. Machura, S. Mazur
University of Agriculture in Krakow, Poland

## Posters topic 6
## Food quality and safety

**P6.2** **Novel electrochemical sensor for the multiple detection of pesticides using bismuth ferrite nanoflowers**

S. El-Akaad[1,2], M.A. Mohamed[2], M.M. Elmasri[3], E.A. Abdelaleem[4], N.S. Abdelwahab[4], S. De Saeger[1], N. Beloglazova[1,5,6]
[1]Ghent University, Belgium; [2]National Organization for Drug Control and Research; [3]National institute of standards; [4]Benisuef University, Egypt; [5]South Ural State University; [6]Saratov State University, Russia


**P6.3** **Changes in microbial load and antioxidative status of ready-to-eat salads as affected by the vegetable type, season, and producer**

P. Xylia[1], G. Botsaris[1], A. Chrysargyris[1], P. Skandamis[2], N. Tzortzakis[1]
[1]Cyprus University of Technology, Cyprus; [2]Agricultural University of Athens, Greece


**P6.4** **Quality and safety attributes on shredded carrots by using Origanum majorana and ascorbic acid sanitation means**

P. Xylia[1], B. Clark[2], A. Chrysargyris[1], S. Petropoulos[3], N. Tzortzakis[1]
[1]Cyprus University of Technology, Cyprus; [2]Edge Hill University, UK; [3]University of Thessaly, Greece


**P6.5** **Determination of PAHs in oregano with modified QuEChERS method**

N. Tomcic, M.P. Todorovic, J. Banic-Simicic, B. Marosanovic
SP Laboratorija AD, Serbia


**P6.6** **Temperature and sample form affect the storage stability of residual malathion**

Y. Bian, F. Liu, X. Li
China Agricultural University, China


**P6.7** **The effects of peeling or shelling processing on pesticide residues in four fruit crops**

H.-L. Lu, T.- H.Shyu
Taiwan Agricultural Chemicals and Toxic Substances Research Institute, Taiwan


**P6.8** **Improving pollution management of persistent organic pollutants to reduce the ımpact on people and the environment (RLA 5069 ARCAL CXLII)**

P. Gatti[1], H. Heinzen[2], J. A. Guerrero[3], C. Carrasco[4], P. Enriquez[5], M. Masís[6], A. Ramírez[7], C.R. Castro[8], G. Alvarez[9], G. Garcia[10], S. Caballero[1]
[1]Instituto Nacional de Tecnología Industrial INTI, Argentina; [2]Facultad de Química, Uruguay; [3]Universidad Nacional de Colombia Email, Colombia; [4]Universidad Mayor de San Andrés, Bolivia; [5]Servicio Agrícola y Ganadero (SAG), Chile; [6]Centro de Investigación en Contaminación Ambiental (CICA), Costa Rica; [7]Instituto de Innovación en Biotecnología e Industria, Dominican Republic; [8]Subsecretaría de control y aplicaciones nucleares (SCAN), Ecuador; [9]Laboratorio Nacional de Salud Ministerio de Salud Pública y Asistencia Social (MSPAS) Instituto, Guatemala; [10]Tecnológico de Toluca, Mexico


**P6.9** **Crop metabolism to crop trials: Why conduct radiovalidation?**

A. Crowe, S. Penketh, R. Unsworth, Y. Zhang
Envigo, UK


**P6.10** **Determination and residue behavior of propamocarb and cymoxanil in potatoes, tomatoes and cherry tomatoes in field ecosystems with different cultivation conditions**

X. Chen, F. Liu
China Agricultural University, China


**P6.11** **Comparison of adherence properties of pesticides sprayed on different sizes of tomato fruits**

T. Nagata, H. Dobashi, K. Iijima, K. Ohyama
The Institute of Environmental Toxicology, Japan


**P6.12** **Determination of polyoxin B residues in apple using ultra performance liquid chromatography tandem mass spectrometry**

L. Chen, B. Liu, C. Jia
Beijing Academy of Agriculture and Forestry Sciences, China

## Posters topic 6
## Food quality and safety

**P6.13** **Dissipation of pesticide in raw and processed pears**
P. Parlakis[1], Z.C. Adamidou[1], E.-N. Papadakis[2], U. Menkissoglu-Spiroudi[2], Z. Vryzas[1]
[1]Democritus University of Thrace; [2]Aristotle University of Thessaloniki, Greece

**P6.14** **Performance evaluation of laboratories participating in the EU Proficiency Tests for Pesticide Residues in Fruit** and Vegetables (EUPT-FV) from 2013 to 2017 by using the "Laboratory Triple-A Rating" approach
A. Valverdea, A.R. Fernández-Alba, C. Ferrera, A. Aguilera
University of Almería, Spain

**P6.15** **Fast determination of glyphosate residue in mint herb by QuEChERS and UPLC/MS/MS**
H. Zhang, X. Feng, L. Pan, T. Xu
China Agricultural University, China

**P6.16** **Multi-residue analysis of 35 pesticide in medlar using QuEChERS and HPLC-MS/MS and evaluation of processing factors and storage stability**
W. Yao, L. Han, S. Song, Y. Bi
China Agricultural University, China

**P6.17** **The determination of thiram residues in fruit by UPLC-MS/MS**
G. Dean, S. Brewin, H. Harper, A. Blakely
Envigo CRS Ltd, UK

**P6.18** **The determination of ziram residues in fruit by LC-MS/MS**
G. Dean, S. Brewin, H. Harper, A. Blakely
Envigo CRS Ltd, UK

**P6.19** **Discrimination of Bacillus thuringiensis from other B. cereus group based on proteotyping by MALDI-TOF MS**
H. Tamura[1], Y. Ido[1], K. Kato[1], A. Fujita[1], S. Nagai[1], A. Hosoda[1], N. Takahashi[2], Y. Tsujimoto[2]
[1]Meijo University; [2]Hachioji, Japan

**P6.20** **Improvement of multi-residue analysis method of 340 pesticides in agricultural products using LC-MS/MS**
S.H. Lee[1], S.K. Kawk[1], A. Sarker[1], S.C. Cho[1], H.J. Kim[1], H.R. Jeong[1], Y.D. Lee[2], J.E. Kim[1]
[1]Kyungpook National University; [2]Daegu University, Korea

**P6.21** **Development of a QuEChERS method for the determination of pesticide residues in Portuguese meat by GC-FPD**
V.C. Fernandes[1], N. Komora[2], D. Jesus[2], M. Pintado[2], P. Teixeira[2], C. Delerue-Matos[1]
[1]REQUIMTE/LAQV; [2]Universidade Católica Portuguesa, Portugal

**P6.22** **Development of a QuEChERS method for the determination of six organophosphorus pesticides in vine shoots by GC-FPD**
V.C. Fernandes[1], M.M. Moreira[1], M. Chen[2], S. Morais[1], C. Delerue-Matos[1]
[1]REQUIMTE/LAQV, Portugal; [2]Université Paris-Sud, France

**P6.23** **Simultaneous determination of mesotrione, s-metolachlor, and terbutilazine in pesticide formulations**
S.D. Lazic, D.B. Sunjka, S.M. Vukovic, I. Benke, A. Alavanja, A.D. Zunic
University of Novi Sad, Serbia

**P6.24** **Method for mercury determination in tuna and rice samples by atomic absorption spectrometry of thermal decomposition amalgamation TDA AAS**
K. Quesada, B. Checa, J. Bonilla
Ministerio de Desarrollo Agropecuario, Panama

## Posters topic 6
## Food quality and safety

**P6.25** **Effects of herbicides on yield and the shelf life of yam: A case study in the Nanumba traditional area of Ghana**
A. Wumbei[1,2], J.K. Bawa[2], M.A. Akudugu[2], M. Houbraken[1], P. Spanoghe[1]
[1]Ghent University, Belgium; [2]University for Development Studies, Ghana

**P6.26** **Pesticide residues in processed table olives**
E.L. Tsoupras, Z C. Adamidou, Z. Vryzas
Democritus University of Thrace, Greece

**P6.27** **A comparison of import tolerance setting procedures in various countries and territories**
M. Fahrbach, G.M. Dean
Envigo, UK

**P6.28** **What's in a residue definition?**
J. Oliver-Kang, J. Ruhl, P. Geurs
Corteva Agriscience, UK

**P6.29** **Residual analysis and dietary exposure risk assessment of triazophos in horseradish**
M. He, X. Zhu, C. Jia, P. Yu
Beijing Academy of Agricultural and Forestry Science, China

## Posters topic 9
## Mode of action and resistance

**P9.1** **Dufulin inhibits the virulence of Southern rice black-streaked dwarf virus P6 protein**
X. Li, M. Huang, D. Wang, K. Chen, D. Gao
Ministry of Education/Guizhou University, China

**P9.2** **Amino-pyrazoles - Structure activity relationship exploration & mode of action elucidation**
C. Dey, A. Weber, C. Winter, B. Mueller, M. Fehr
BASF SE, Germany

**P9.3** **Machine-learning assisted phenotyping: From fungal morphology to mode of action hypothesis**
S. Laroui[1], E. Debreuve[1], X. Descombes[1], F. Villalba[2], F. Villiers[2], A. Vernay[2]
[1]Nice Sophia-Antipolis University; [2]Bayer CropScience Disease Control Research Center, France

**P9.4** **Revysol® - Fungicidal action on a microscopic level**
I. Siepe[1], D. Strobel[1], R. Bryson[1], M. Schuster[2], G. Steinberg[2], J. Smith[3], S. Kurup[4]
[1]BASF SE, Germany; [2]University of Exeter; [3]ADAS Rosemaund; [4]Rothamsted Research, UK

**P9.5** **Role of GhABP19, a novel germin-like protein form Gossypium hirsutum, in the regulation of resistance to Verticillium and Fusarium wilt disease**
Y. Hou, Y. Pei, X. Li, Y. Sun, N. Liu, Y. Zhu, Y. Jia
China Agricultural University, China

**P9.6** **A hytoalexin-deficient4 (GhPAD4) mediates resistance to Verticillium wilt in cotton**
Y. Sun, X. Li, N. Liu, Y. Pei, Y. Zhu, Y. Jia, Y. Hou
China Agricultural University, China

**P9.7** **Molecular evidence for the involvement of GhWSR in drought tolerance and response to Fusarium oxysporum in cotton**
X. Li, Y. Sun, N. Liu, Y. Pei, Y. Zhu, Y. Jia, Y. Hou
China Agricultural University, China

**P9.8** **Effect of temperature on the expression of fungicide resistance in Zymoseptoria tritici**
C. Ugazio[1], M. Bomble[1], A. Siah[1], M. Holvoet[1], C. Payet[2], C. Tuffet[2], P. Halama[1]
[1]ISA Institut Charles Viollette; [2]Bayer CropScience, France

**P9.9** **Studies on the safety mechanism of a herbicide, Axeev® to wheat**
Y. Tanetani, K. Kawai
Kumiai Chemical Industry Co., Japan

**P9.10** **Influence of plant phenolic compounds in controlling ryegrass response to glufosinate ammonium under different temperatures**
T. Mucheri, P.J. Pieterse, C. Reinhardt, A. Kleinert
Stellenbosch University, South Africa

**P9.11** **Control of commonly occurring insecticide resistant hemipteran pests with spiropidion, a new accase inhibitor insecticide**
C.T. Zimmer[1], A. Stempniewicz[1], P. Süess[1], J. Elias[1], R. Slater[2], R. Senn[2]
[1]Syngenta Crop Protection Stein; [2]Syngenta Crop Protection Basel, Switzerland

**P9.12** **Susceptibility of the African bollworm, Helicoverpa armigera to two commonly used insecticides in Sudan**
H. Abdelgader
Agricultural Research Corporation, Sudan

**P9.13** **Metabolisms of cycloxaprid by P450 CYP6CM1vQ and CYP6G1 in vitro**
Z. Xu[1], Q. Mei[1], Y. Zhang[2], X. Shao[1], J. Cheng[1], Z. Li[1]
[1]East China University of Science and Technology; [2]Nanjing Agricultural University, China

## Posters topic 9
## Mode of action and resistance

**P9.14** **CYP6BQ25, a second cytochrome P450 mediating the detoxification of deltamethrin in pollen beetle (Brassicogethes aeneus)**
D. Boaventura[1,2], A.D.P. Baez[3], B. Buer[2], O. Gutbrod[2], M. Kohler[2], D. Steinbach[2], R. Nauen[2]
[1]University of Bonn; [2]Bayer AG, Germany; [3]Macquarie University, Australia

**P9.15** **Physiological and molecular analysis of oxazosulfyl on insect**
T. Suzuki, S. Yamato
Sumitomo Chemical Co., Japan

**P9.16** **Monitoring of insecticide resistance and associated mutations in the sweet potato whitefly, Bemisia tabaci, in China**
S. Wang, H. Zheng, Y. Zhang
Chinese Academy of Agricultural Sciences, China

**P9.17** **Biological activities of nitromethylene analogues of imidacloprid having a fluorinated or unsaturated substituent**
H. Nishiwaki, A. Kugiya, Y. Matsubara, S. Yamauchi
Ehime University, Japan

**P9.18** **Identification of 2-tridecanone/fenvalerate regulatory elements in the promoter of cytochrome P450 CYP6B7 in Helicoverpa armigera**
L. Xu, Y. Huang, P. Wu, J. Zheng, L. Qiu
China Agricultural University, China

**P9.19** **Computational insights into the synergistic mechanism of resistance to fipronil in RDL-GABA receptor of Nilaparvata lugens**
J. Cheng, T. Li, C. Zhou, Z. Li
East China University of Science and Technology, China

**P9.20** **Molecular tools for monitoring of resistance to insecticides**
M. Mboup
FMC Agricultural Solutions, France

**P9.21** **Genetics, molecular and functional characterization of insecticide/acaricide resistance in Tetranychus urticae**
M. Riga[1,2], K.M. Papapostolou[1,2], E. Skoufa[1,2], D. Tsakireli[2], S. Bajda[3], V. Douris[1], E. Vorgia[1], W. Dermauw[3], T. Van Leeuwen[3], J. Vontas[1,4]
[1]Institute of Molecular Biology & Biotechnology; [2]University of Crete, Greece; [3]Ghent University, Belgium; [4]Agricultural University of Athens, Greece

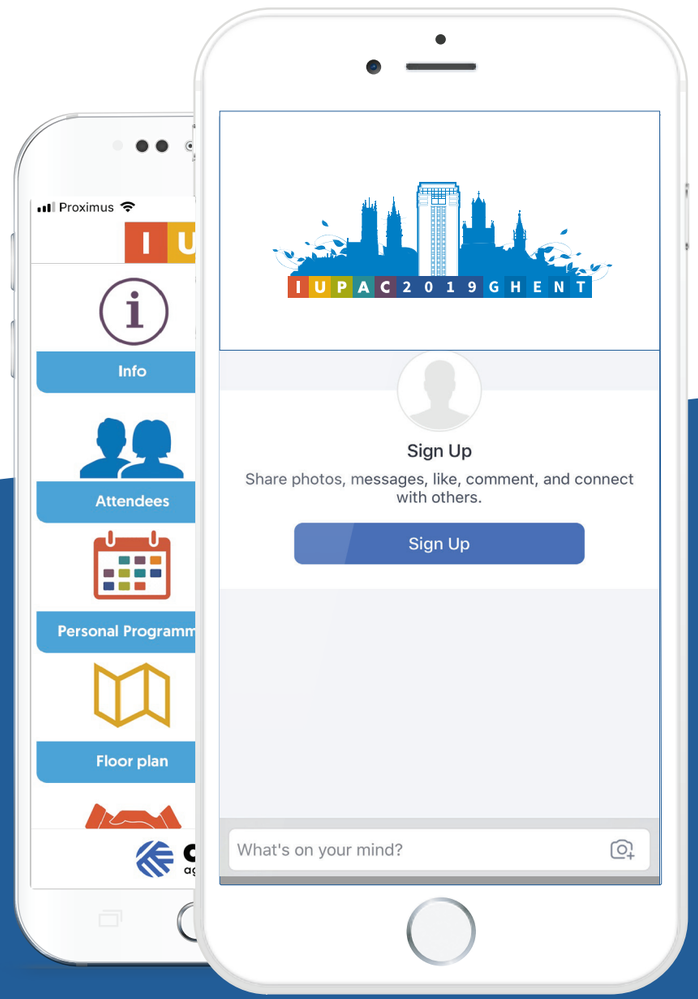
**P9.22** **Selectivity, structure-activity relationship and binding site in targets of okaramines, indolealkaloid insecticides produced by Penicillium simplicissimum**
A. Noguchi[1], N. Kato[2], S. Furutani[2], K. Kai[3], H. Hayashi[3], H. Osada[2], K. Matsuda[1]
[1]Kindai University; [2]RIKEN; [3]Osaka Prefecture University, Japan

**P9.23** **Discovery of growth-defence regulated JA signaling pathway genes for plant protection**
N. Zhang, Z. Fan, B. Zhao, D. Yang
Nankai University, China

**P9.24** **Aminopyrifen, a novel 2-amino nicotinate fungicide with a unique mode of action and broad-spectrum**
M. Hatamoto, R. Aizawa, K. Koda, T. Fukuchi
Agro-Kanesho Co., Japan

APP

IUPAC 2019 GHENT

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IUPAC 2019

# PROGRAMME

## WEDNESDAY

IUPAC 2019 GHENT

## Programme at a Glance - Wednesday, May 22

| | | Auditorium | Van Rysselberghe Room | Jan Van Eyck Room | Hubert Van Eyck Room |
|---|---|---|---|---|---|
| 08.00 | Presentations upload | | | | |
| 08.30 | | Plenary Talks<br>N. Gras<br>J. v. den Borne | | | |
| 09.40 | Coffee | | | | |
| 10.20 | Parallel Sessions | Workshop: Ready for your close up? | 3.3 New chemistries targeting crop enhancement and animal parasite, nematode and vector control (1/2) | 2.5 Biostimulants | 7.6 Advances in pesticides biodegradation and metabolism: Mechanisms, applications and regulatory issues |
| 12.20/12.40 | Lunch | | | | |
| 13.00-18.00 | Field Excursions | | | | |

| | | Auditorium |
|---|---|---|
| 13.30-15.30 | | ECPA - Session 1:<br>Latest regulatory developments (Policy developments, REFIT) |
| 15.30-16.15 | Break | |
| 16.15-18.15 | | ECPA - Session 2:<br>Update on AS evaluation process |
| 18.15-19.15 | Break | |
| 19.15-20.15 | | ECPA evening Debate:<br>What model for European agriculture? |

| Van der Goes Room | Bauwens Room | Baekeland Room I | Baekeland Room II | Baekeland Room III | Ghislain Room I | Ghislain Room II |
|---|---|---|---|---|---|---|
| | | | | | | |
| Coffee | | | | | | |
| 3.3 New chemistries targeting crop enhancement and animal parasite, nematode and vector control (2/2) | 4.4 Approaches of reducing offset drift and the use of multifunctional field margins | 6.3 Modern analytical techniques to detect and control residues in food and feed (3/3) | 9.3 Insecticides: Mode of action and resistance (1/3) | 7.10 Advances in mathematical modelling of pesticides environmental exposure | 1.5 Facilitating trade – Need for harmonization of global MRLs | 1.2 Lifecycle product stewardship – Linking all aspects of the stewardship arc |
| Lunch | | | | | | |

## Plenary Talks

08.30 **Emerging Food Safety Risk : New Challenges for Latin American Countries**
Nuri Gras, Chilean Food Safety and Quality Agency, Chile

09.05 **Precision agriculture in practice**
Jacob van den Borne, van den Borne Aardappelen, The Netherlands

09.40-10.20 **Coffee Break**

10.20 **Ready for your close up? How to be a better science communicator and an engaging public speaker**
**Organiser:** Femi Oke, Moderate The Panel (USA)

How good are you at disseminating your work for the general public, policy makers and non-experts? Can you break it down, make it accessible and convey your passion and purpose clearly and without jargon? If you need some guidance with communication skills this practical session will help. It's designed to share and try out advice and tools that can be used immediately to feel more comfortable on stage and in interview situations.

Preparation is the key to being a confident speaker. Please come ready to share a five minute story about your work or working life with the session. You can submit questions about specific communication challenges you have in advance to therealfemioke@gmail.com

12.20 **Lunch**

13.00 **Field Excursions**

13.30-15.30 **ECPA SESSION 1: Latest regulatory developments**

15.30-16.15 **Break**

16.15-18.15 **ECPA SESSION 2: Update on AS evaluation process**

18.15-19.15 **Break**

19.15-20.15 **ECPA Evening debate: What model for European agriculture?**





## 3.3 New chemistries targeting crop enhancement and animal parasite, nematode and vector control (I)

**Chairs:** Peter Maienfisch, Syngenta Crop Protection AG, Switzerland &
Xuhong Qian, East China Normal University, China

10.20 3.3.1 **Malaria eradication, agricultural innovation and the ZERO by 40 Initiative**
N. Hamon, IVCC, UK

10.40 3.3.2 **Discovery and optimisation of novel compounds for the control of anopheline vectors of malaria**
P. Wege, Syngenta Jealott's Hill International Research Centre, UK

11.00 3.3.3 **Monoterpenoid esters as long-lasting spatial mosquito repellents**
J.S. Klimavicz, Iowa State University, USA

11.20 3.3.4 **Synergies between insecticide and parasiticide research: An evolving success story**
A. Plant, MSD Animal Health Innovation GmbH, Germany

11.40 3.3.5 **Antiparasitic dinitrile compounds for fly control in cattle**
N. Huwyler, BASF SE, Germany

12.00 3.3.6 **Development of highly efficient plant virus disease prevention and control drug candidate NK0209 and NK0333**
H. Song, Nankai University, China

12.20 3.3.7 **Discovery of novel antiviral agents based on marine natural products**
Z.W. Wang, Tianjin Normal University, China

12.40 Lunch

13.00 **Field Excursions**

## 2.5 Biostimulants

**Chair:** Maarten Ameye, Ghent University, Belgium

10.20 2.5.1 **The potential of biostimulants and plant monitoring tools to reduce water and nutrient consumption in horticulture**
J. Viaene, PCS Ornamental Plant Research, Belgium

10.40 2.5.2 **How to help crops tolerate better abiotic stress thanks to the use of biostimulants?**
J.C. Cabrera, Fyteko SA, Belgium

11.00 2.5.3 **BIO2BIO - From organic wastes to biostimulants and biopesticides**
D. Geelen, University, Belgium

11.20 2.5.4 **Nutrient-unlocking biostimulants, managing the complex regulatory path to commercialization**
J. Verhaert, Bayer Crop Science, Belgium

11.40 2.5.5 **Managing abiotic stress impacts on crop yield and quality with high performance biostimulant products**
C. Repiso, Trade Corporation International, Spain

12.00 2.5.6 **The PathoViewer: An automated phenotyping platform**
M. Ameye, Ghent University, Belgium

12.20 Lunch

13.00 **Field Excursions**





## 7.6 Advances in pesticides biodegradation and metabolism: Mechanisms, applications and regulatory issues

Chairs: Fabrice Martin-Laurent, Institut National de la Recherche Agronomique, France & Dimitrios Karpouzas, University of Thessaly, Greece

10.20 7.6.1 **Microbial catabolism of chemical pesticides: The mechanism and its potential application**
J. Jiang, Nanjing Agricultural University, China

10.40 7.6.2 **Bioaugmentation in drinking water treatment plants for the treatment of micropollutants**
B. Horemans, KULeuven, Belgium

11.00 7.6.3 **Mapping microbial degradation of pesticides with stable isotope probing**
K.M. Nowak, Technische Universität Berlin, Germany

11.20 7.6.4 **The degradation of crop protection products in Brazilian soils**
N. Baudin, Syngenta Ltd., UK

11.40 **Discussion**

12.20 Lunch

13.00 **Field Excursions**

## 3.3 New chemistries targeting crop enhancement and animal parasite, nematode and vector control (II)

**Chairs:** Sven Mangelinckx, Ghent University, Belgium & Peter Jeschke, Bayer AG, Germany

10.20 3.3.8 **Design, synthesis and biological evaluation of strigolactones derivatives for crop enhancement applications**
A. De Mesmaeker, Syngenta Crop Protection, Switzerland

10.40 3.3.9 **Use of synthetic plant defense elicitors as reduced-risk pesticide alternatives**
T. Eulgem, University of California, USA

11.00 3.3.10 **Discovery and optimization of 3(2H)-pyridazinone derivatives as novel plant activators**
Y. Xu, East China University of Science and Technology, China

11.20 3.3.11 **CEDROZ®, new terpene nematicide against root knot nematode on Solanaceae and cucurbits**
E. Medico, Eastman Chemical B.V., Belgium

11.40 3.3.12 **Design, structural derivation and nematicidal activities of 1,2,3-Benzotriazin-4-one derivatives**
X. Xu, East China University of Science and Technology, China

12.00 3.3.13 **A novel class of priming agents with activity against fungi and nematodes**
T. Kyndt, Ghent University, Belgium

12.20 3.3.14 **Mulching efficacy and effect on soil microbial health of a sprayable, biodegradable polymeric mulch**
C.K. Borrowman, Monash University, Australia

12.40 Lunch

13.00 **Field Excursions**



Monday | Tuesday | **Wednesday** Bauwens | Thursday | Friday | Posters

## 4.4 Approaches of reducing offset drift and the use of multifunctional field margins

**Chair:** Ronald Vermeer, Bayer CropScience, Germany

10.20 4.4.1 **Pesticide dust drift from seed drilling - Part 1: The role of dust properties and sowing equipment**
D. Foqué, Flanders research institute for agriculture, fisheries and food (ILVO), Belgium

10.40 4.4.2 **Reducing off-target losses by formulation design – Case studies**
W. Abraham, Bayer Crop Science, USA

11.00 4.4.3 **Increased spray deposition and reduced spray drift of multiple row orchard sprayers**
J.C. van de Zande, Wageningen University and Research, The Netherlands

11.20 4.4.4 **Drift reduction: What determines the drop size in sprays, and how can it be changed with additives?**
D. Bonn, University of Amsterdam, The Netherlands

11.40 4.4.5 **Understanding natural and social capital valuation of multifunctional field margins in agricultural landscapes**
J. Lammerant, Arcadis, Belgium

12.00 **Discussion**

12.20 Lunch

13.00 **Field Excursions**

## 6.3 Modern analytical techniques to detect and control residues in food and feed (III)

**Chairs:** Jose Diana di Mavungu, Ghent University, Belgium &
Sara Cunha, University of Porto, Portugal

10.20 6.3.13 **Advances in analytical instrumentation for pesticide residue testing**
A.R. Fernández-Alba, University of Almería, Spain

11.00 6.3.14 **Contaminants detection in fruits and vegetables using screen printed electrodes and magnetic particles**
A. de la Escosura, University of Oviedo, Spain

11.20 6.3.15 **Ensuring food safety through analytical verification of pesticides degradation**
H. Heinzen, University of the Republic, Uruguay

11.40 **Analytical forum: Opportunity for the audience to ask experts in the field about analytical issues and challenges**
Analytical forum moderators: A. Fernández-Alba, A. Valverde, Jose' Diana Di Mavungo, H. Heinzen, V. Cesio, S.Cunha, Niladri Chatterjee, Supradip Saha, Lijun Han and N. Gras

12.20 Lunch

13.00 **Field Excursions**





## 9.3 Insecticides: Mode of action and resistance (I)

**Chairs:** Ralf Nauen, Bayer AG, Germany & Thomas Van Leeuwen, Ghent University, Belgium

10.20 9.3.1 **A critical determinant of the sensitivity of ligand-gated chloride channels to fluralaner and ivermectin**
Y. Ozoe, Shimane University, Japan

10.40 9.3.2 **Discovery of a novel class of insect ryanodine receptor activators, pyrrole-2-carboxamides**
D. Cordova, FMC Agricultural Solutions, USA

11.00 9.3.3 **Towards next generation acaricides for reducing arthropod-borne disease in honey bee colonies**
T.D. Anderson, University of Nebraska, USA

11.20 9.3.4 **Identification and mechanism of action of novel mosquitocidal toxins from Clostridia-like strains**
S. Gill, University of California, USA

11.40 9.3.5 **Mode of action studies on spiropidion**
A.J. Flemming, Syngenta Jealott's Hill International Research Centre, UK

12.00 9.3.6 **β-β interface of ligand gated ion channels: A hidden target of insecticides**
M. Ihara, Kindai University, Japan

12.20 9.3.7 **The mode of action of isocycloseram: A novel isoxazoline insecticide**
A.J. Crossthwaite, Syngenta Crop Protection, UK

12.40 Lunch

13.00 **Field Excursions**

## 7.10 Advances in mathematical modelling of pesticides environmental exposure

**Chairs:** Laure Mamy, INRA, France & Piet Seuntjens, Ghent University, Belgium

10.20 7.10.1 **New developments in aquatic exposure assessment of pesticides in Latin America**
B. Jene, BASF SE, Germany

10.40 7.10.2 **The practical use of geospatial data in environmental risk assessment to surface waters for plant protection products in the EU**
C. Hazlerigg, Enviresearch Ltd., UK

11.00 7.10.3 **A probabilistic approach to exposure assessment for downwind deposits of spray drift**
H.J. Holterman, Wageningen University and Research, The Netherlands

11.20 7.10.4 **A systems approach to modeling pesticide transport in a pacific northwest watershed**
J.J. Jenkins, Oregon State University, USA

11.40 7.10.5 **Development of new national scenarios for South EU Zone countries for higher tier predicted environmental concentrations in groundwater and surface water following pesticide application to rice paddies**
G. Fragkoulis, Aeiforia S.r.l, Italy

12.00 7.10.6 **Pesticide dust drift from seed drilling. Part 2: CFD modelling**
P. Verboven, KU Leuven, Belgium

12.20 Lunch

13.00 **Field Excursions**





## 1.5 Facilitating trade – Need for harmonization of global MRLs

**Joint IUPAC-ECPA Session**

**Chair:** Wibke Meyer, CropLife, Belgium

10.20 Opening remarks
W. Meyer, Croplife, Belgium

10.35 1.5.1 **The EU MRL setting policy and its impact on trade**
G. Garçon, BASF SE, Germany

10.50 1.5.2 **The next steps in the global harmonization of minor use MRLs**
J. Baron, IR-4 Project, USA

11.05 1.5.3 **Global zoning and exchangeability of field trial residues between zones: Are there systematic differences in pesticide residues across geographies?**
D.J. Miller, U.S. Environmental Protection Agency, USA

11.20 1.5.4 **Can import tolerances promote harmonizing of MRLs and global trade?**
E. Keller, Knoell Germany GmbH, Germany

11.35 1.5.5 **New tool to accelerate harmonization of MRLs globally**
P. Perez, Agrobase-Logigram, France

11.50 1.5.6 **Facilitating trade – How to accelerate harmonization of MRLs globally**
A.B. Oliveira, Bryant Christie Inc., USA

12.05 1.5.7 **Harmonization opportunities for missing MRL**
C. Tiu, Corteva Agrisciences, USA

12.20 Lunch

13.00 **Field Excursions**

## 1.2 Lifecycle product stewardship – Linking all aspects of the stewardship arc

**Joint IUPAC-ECPA Session**

**Chair:** Andrew Ward, CropLife International, Belgium

10.20 **Opening remarks**
A. Ward, Croplife, UK

10.40 1.2.1 **Agrochemical industry development, trends in R&D and the impact of regulation**
M. Phillips, Agbioinvestor, UK

11.00 1.2.2 **Testing in support of agrochemical management and stewardship – An Australian perspective**
A.L. Tyler, Tyler Agrochemical Consulting, Australia

11.20 1.2.3 **The management of the crop protection industry's container management programs**
E. Jones, ERM, Belgium

11.40 1.2.4 **Product stewardship: A virtuous circle**
C. Langrand-Lerche, Bayer AG, Germany

12.00 1.2.5 **Management of crop protection packaging in Europe: Status and key challenges for sustainable and effective container management**
S. Byrde, CMS Project Consultant, ECPA, Belgium

12.20 Lunch

13.00 **Field Excursions**

PROGRAMME
THURSDAY

IUPAC 2019 GHENT

## Programme at a Glance - Thursday, May 23

| | | Auditorium | Van Rysselberghe Room | Jan Van Eyck Room | Hubert Van Eyck Room | Van der Goes Room | Bauwens Room | Baekeland Room II | Baekeland Room III |
|---|---|---|---|---|---|---|---|---|---|
| 08.00 | Poster hang-up Presentations upload | | | | | | | | |
| 08.30 | | Plenary Talks H. Ngwenya V. Andriukaitis | | | | | | | |
| 09.40 | Coffee | | | | Coffee | | | | |
| 10.20 | Parallel Sessions | ECPA - Session 3: New trends and opportunities for the future | 3.4 New chemistries targeting weed control (½) | 2.7 Natural product-based pest management | 7.9 Mitigation and management of pesticide emissions to the environment | 4.5 Innovative and green formulation technologies | 6.5 Advances in dietary risk assessment and decision making | 9.3 Insecticides: Mode of action and resistance (2/3) | 1.6 Risk assessment vs. hazard based decision making |
| 12.20/12.40 | Lunch | | | | Lunch | | | | |
| 12.45 - 14.15 | Lunch Workshop | | | | | | Cumulative risk assessment for pesticides: Which way to go ? | | |
| 13.00 | Poster Session | Poster Presentations of Topics 3 and 4 | | | Poster Presentations of Topics 3 and 4 | | | | |
| 14.15 | | | | | Poster Award Ceremony (Topics 2, 6 & 9) | | | | |
| 13.30-15.30 | | ECPA - Session 4: Zonal workshop | | | | | | | |
| 14.30-16.30 | Parallel Sessions | | 3.4 New chemistries targeting weed control (2/2) | 2.1 RNA-Based biocontrol 2.9 and 2.10 genetic manipulation of pests and crops & 2.7 Natural product-based pest management | 3.5 New approaches to crop protection products: discovery tools, green chemistry (½) | 4.6 Seed treatments and innovative treatment technologies | 6.4 MRL and International guidelines/ standards/ regulations for consumer protection | 9.3 Insecticides: Mode of action and resistance (3/3) | 1.7 Communicating science in an era of fake news |
| 16.30 | Coffee | | | | Coffee | | | | |
| 17.00 | | N-GAGE Champions | | | | | | | |
| 17.30-18.30 | Debate | Communication on agroscience to the broad public | | | | | | | |

## Plenary Talks

08.30 **PERFECT UPportunities for REALsearch in AgriCOOLture**
Hlami Ngwenya, University of Free State, South Africa and International Development Consultant

09.05 **The EU's plant protection policy: Lessons learned and next steps**
Vytenis Andriukaitis, EU Commissioner on Food & Health, Health & Food Safety - European Commission, Lithuania

09.40-10.20 Coffee Break

10.20-12.20 **ECPA - Session 3: New trends and opportunities for the future**

12.20-14.30 Lunch, Lunch Workshop and Poster Session

13.30-1630 **ECPA - Session 4: Zonal workshop**

16.30-17.00 Coffee Break

17.00-17.30 **N-GAGE Champions**
**Chair:** Fiona Chandler, Coordinator, IUPAC Next Generation Programme

Bruna Czarnobai De Jorge, Brazil, studying at the Technical University of Darmstadt and Julius Kühn-Institute, Germany
Antonette Ncube, Botswana, studying online with the University of South Wales, UK
Eric Jhon Cruz, Philippines, studying at the University of the Philippines Los Baños (UPLB), Philippines
Ropo Ayotunde, Nigeria, studying at the University of Ilorin, Nigeria
Simon Appeltans, Belgium, Doctoral Fellow Precision Soil & Crop Engineering, Faculty of Bioscience Engineering at Ghent University, Belgium

17.30-18.30 **Debate**

**Communication on agro-science to the broad public**
Joost Dessein, Ghent University, Belgium
Aimee Hood, Bayer CropScience, USA
Ilaina Khairulzaman, Sense about Science, Ireland
Dick Veerman, Foodlog, The Netherlands





## 3.4 New chemistries targeting weed control (I)
**Chairs:** Sven Mangelinckx, Ghent University, Belgium &
Changling Liu, Sinochem International Corporation, China

10.20 3.4.1 **The discovery of aryl pyrrolidinone anilides: A new mode-of-action herbicide class that inhibits dihydroorotate dehydrogenase**
T.P. Selby, FMC Agricultural Solutions, USA

10.40 3.4.2 **Luximo™ herbicide – Rediscovering a dormant molecule**
M.C. Witschel, BASF SE, Germany

11.00 3.4.3 **Discovery and mode of action of cyclopyrimorate, a new paddy rice herbicide**
M. Shino, Mitsui Chemicals Agro Inc., Japan

11.20 3.4.4 **A new herbicide mode of action from a bioherbicide component, spliceostatin C**
S.O. Duke, USDA, USA

11.40 3.4.5 **Resistance-gene directed discovery of a natural product herbicide with a new mode of action**
Y. Tang, University of California, USA

12.00 3.4.6 **Towards a mechanistic understanding of IGPD – A potential herbicide target**
R. Viner, Syngenta, UK

12.20 3.4.7 **Isoxazolopyridines - A novel chemical cluster and a new mode of action for dicot weed control**
T.H. Seitz, BASF SE, Germany

12.40-14.30 Lunch, Lunch Workshop and Poster Session

## 3.4 New chemistries targeting weed control (II)
**Chairs:** Matthias Witschel, BASF SE, Germany & Robb DeBergh, FMC Agricultural Solutions, USA

14.30 3.4.8 **Discovery of new 4-hydroxyphenylpyruvate dioxygenase inhibitors as potential herbicides**
G.F. Yang, Central China Normal University, China

14.50 3.4.9 **Tirexor™ – Design of a new resistance breaking PPO-inhibitor**
M. Witschel, BASF SE, Germany

15.10 3.4.10 **Rinskor™ active herbicide a new environmentally friendly tool for weed management in rice and aquatic environments**
P. Havens, Corteva AgriScience, USA

15.30 3.4.11 **Investigating C-H activation chemistry of N-phenyl azoles: Discovery of a new class of herbicides**
P.L. Sharpe, FMC Agricultural Products, USA

15.50 3.4.12 **Discovery of novel uracil herbicide by using intermediate derivatization approach**
C. Liu, Shenyang Sinochem Agrochemicals R&D Co. Ltd., China

16.10 3.4.13 **Herbicidal activity and application of 1- (furan-2-yl) methylphosphonates as PDHc inhibitor against broadleaf weeds**
H.W. He, Central China Normal University Wuhan, China

16.30-17.00 Coffee Break

## 2.7 Natural product-based pest management

**Chair:** Guy Smagghe, Ghent University, Belgium

10.20 2.7.1 **Biorational products as effective spatial repellents against mosquitoes of multiple genera**
C. Corona, Iowa State University, USA

10.40 2.7.2 **Evaluation of Aib and PEG-polymer insect kinin analogs on mosquito and tick GPCRs identifies potent new pest management tools with potentially enhanced biostability and bioavailability**
P.V. Pietrantonio, Texas A&M University, USA

11.00 2.7.3 **Plant and microbial derived natural products with herbicidal activity**
K.M. Meepagala, USDA-ARSMS, USA

11.20 2.7.4 **An alternative agent for aphid control: Novel insect kinin mimics**
X. Yang, Agricultural University, China

11.40 2.7.5 **AgrobodyTM biopesticides, the next generation biopesticides**
M. Peferoen, AgroSavfe, Belgium

12.00 2.7.6 **Development of biological crop protection agents from novel microbes**
R.N. Asolkar, Marrone Bio Innovations, USA

12.20 2.7.7 **Exploring modes of action of novel biopesticides: From model cell line to target insects**
M.Y. Mak, Western Sydney University, Australia

12.40-14.30 Lunch, Lunch Workshop and Poster Session

## 2.1 RNA-based biocontrol and 2.9 genetic manipulation of pests and crops and 2.7 Natural product-based pest management

**Chair:** Stephen Duke, USDA, USA

14.30 2.9.1 **Validation of candidate maize insect and fungal resistance genes through functional analysis**
P. Dowd, USDA, USA

14.50 2.1.8 **Study of O-glycosylation related genes in development of Tribolium castaneum**
W. Li, Ghent University, Belgium

15.10 2.1.9 **RNAi: Revisiting lethal genes, non-target effects and selectivity issues**
S. Mehlhorn, University of Göttingen, Germany

15.30 2.7.8 **Challenge of nonribosomal peptide (NRP) identification: Kendrick mass defect for molecular formula assignment of NRPs**
C. Flahaut, Institut Charles Viollette, France

15.50 2.7.9 **The effectiveness of selected biological and biotechnical agents in the protection of garlic (Allium sativum l.)**
J. Nawrocki, University of Agriculture in Krakow, Poland

16.10 2.7.10 **Discovery of antimicrobial activity of natural products from black soldier Hermetia illucens for agricultural protection**
E.I. Marusich, Moscow Institute of Physics and Technology, Russia

16.30-17.00 Coffee Break





## 7.9 Mitigation and management of pesticide emissions to the environment

**Chairs:** Carlos Rodriguez-Rodriguez, University of Costa Rica, Costa Rica &
Robin Sur, Bayer AG, Germany

10.20 7.9.1 **Sensitivity analysis of the STICS-MACRO model to identify cropping practices reducing pesticide losses**
L. Mamy, INRA-AgroParisTech-Université Paris-Saclay, France

10.40 7.9.2 **Stimulating implementation of best management practices to reduce water contamination by PPPs**
E. Pauwelyn, Inagro vzw, Belgium

11.00 7.9.3 **Influence and significance of point source pollution – Observations from industry monitoring studies**
P. Sweeney, Syngenta Ltd, UK

11.20 7.9.4 **Micro-dams on potato and maize fields: Consideration in environmental risk assessment as part of the MAgPIE toolbox**
S. Sittig, Knoell Germany GmbH, Germany

11.40 7.9.5 **Long-term surface water monitoring of pesticides to evaluate the impact of mitigation measures in an agricultural catchment in Belgium**
G. Quaglia, VITO, Belgium

12.00 7.9.6 **Photodegradation of chlorpyrifos, malathion and dimethoate by sunlight in the Sudan**
A.O. Abdelbagi, University of Khartoum, Sudan

12.20-14.30 Lunch, Lunch Workshop and Poster Session

14.15 **Poster Award Ceremony**
Announcement of the poster award winners in topics 2. 6 & 9

## 3.5 New approaches to crop protection products: Discovery tools, green chemistry (I)

**Chairs:** Sven Mangelinckx, Ghent University, Belgium &
Najam Shakil, Indian Agricultural Research Institute, India

14.30 3.5.1 **The use of green chemistry principles in the responsible design of crop protection processes and products**
G.T. Whiteker, Corteva Agriscience, USA

14.50 3.5.2 **Process route design of macrocyclic picolinamide fungicide X507**
F. Li, Corteva Agriscience, USA

15.10 3.5.3 **New isothiazole inhibitors of protein biosynthesis: Towards the development of modern agchem products**
D. Bernier, Bayer SAS, France

15.30 3.5.4 **New approach to a bacterial causative crop disease and weed controls, using N-3-hydroxyoctanoyl-l- homoserine lactone, a tropolone biosynthetic activator for burkholderia plantarii**
Y. Hashidoko, Hokkaido University, Japan

15.50 3.5.5 **COMPASS - A comprehensive model for pesticide activity in soils designed to guide the development and sustainable use of pesticides**
C.D. Brown, University of York, UK

16.10 3.5.6 **Nitrogen fertilization: A determining factor for efficiency of plant defense elicitors?**
C. Verly, Staphyt, France

16.30-17.00 Coffee Break

## 4.5 Innovative and green formulation technologies

**Chair:** Pieter Van der Weeën, Oleon, Belgium

10.20 4.5.1 **Simultaneously encapsulated chemical and biological agents for plant protection and nutrition**
M. Vinceković, University of Zagreb, Croatia

10.40 4.5.2 **Green chemistry: A tool to move towards sustainable agrochemicals**
M. Moseley, Yordas Group, UK

11.00 4.5.3 **Fenpicoxamid (INATREQ™ active) – Formulation innovation to maximise efficacy**
N. Foster, Corteva Agrisciences, France

11.20 4.5.4 **Formulation challenges and opportunities for microbial crop protection products**
U. Malang, BASF SE, Germany

11.40 4.5.5 **Plant parasitic nematode management in sub-Saharan Africa through wrap & plant technology**
S.A. Khan, North Carolina State University, USA

12.00 **Discussion**

12.20-14.30 **Lunch, Lunch Workshop and Poster Session**

## 4.6 Seed treatments and innovative treatment technologies

**Chair:** Pieter Verboven, KU Leuven, Belgium

14.30 4.6.1 **Novel polymeric dispersants for application in suspension concentrate and seed coating formulations**
J. Sheehan, Stepan Company, USA

14.45 4.6.2 **Coating seeds with electrospun polymeric nanofibers for crop protection**
S.A. Khan, North Carolina State University, USA

15.00 4.6.3 **Encapsulation – Easier said than done – From concepts to products**
M. Bratz, BASF SE, Germany

15.15 4.6.4 **Modelling of microemulsion phase behavior for agricultural applications using Hydrophilic-Lipophilic Deviation Net Average Curvature (HLD-NAC) approach**
M.P. Tate, The Dow Chemical Company, USA

15.30 4.6.5 **Seed coating polymers for enhanced performance**
S. Kamin, Ashland Inc., USA

16.00 4.6.6 **Structuring of fertilizer compatible agrochemical suspensions**
H. Rieffe, Croda Inc., USA

16.30-17.00 Coffee Break





## 6.5 Advances in dietary risk assessment and decision making

**Chairs:** Liesbeth Jacxsens, Ghent University, Belgium &
Katrin Franke, German Federal Institute for Risk Assessment, Germany

10.20 6.5.1 **An overview of the EFSA-RIVM partnership on cumulative risk assessment**
J. van Klaveren, RIVM, The Netherlands

11.00 6.5.2 **Chemicals in food: critical issues for less than life-time exposure risk assessment**
A. Moretto, International Centre for Pesticides and Health Risk Prevention (ICPS)

11.20 6.5.3 **Concept of risk-benefit analysis balancing the impact of cumulative exposure to pesticides versus beneficial effect on human health due to fruit and vegetable intake**
L. Jacxsens, Ghent University, Belgium

11.40 6.5.4 **Investigation of nickel contamination sources in foods and its exposure assessment**
M. Babaahmadifoodai, Ghent University, Belgium

12.00 6.5.5 **Chronic and acute dietary risk assessment for pesticide residues in food - Methods and results from the Argentinean case**
D.A. Maggioni, National University of Littoral, Argentina

12.20-14.30 Lunch, Lunch Workshop and Poster Session

12.45-14.15 **Lunch Workshop**
**Cumulative risk assessment for pesticides: Which way to go?**
**Organisers:** Jacob Van Klaveren (RIVM), Liesbeth Jacxsens (UGent), Andreja Rajkovic (UGent)

## 6.4 MRL and International guidelines/ standards/regulations for consumer protection

**Chairs:** Katrin Franke, German Federal Institute for Risk Assessment, Germany &
Carmen Tiu, Corteva AgroScience, USA

14.30 6.4.1 **The work of the international expert committees of FAO/WHO JECFA and JMPR**
A. Moretto, International Centre for Pesticides and Health Risk Prevention (ICPS)

14.50 6.4.2 **Enhancing food security and food safety**
C. Tiu, Corteva Agriscience, USA

15.10 6.4.3 **New tool to improve communication of treatment information of crop protection products from the field through the food chain**
P. Perez-Fernandez, Agrobase-Logigram, France

15.30 6.4.4 **Why is it so difficult to harmonise MRLs?**
C.A. Harris, Exponent International Ltd, UK

15.50 6.4.5 **Two become one - The revision of guidelines SANCO/3029/99 and SANCO/825/00**
J. Heidler, German Federal Institute for Risk Assessment, Germany

16.10 6.4.6 **Regulatory consultancy perspective on EU MRL setting for apiary products**
J.L. Clark, Agchem Project Consulting, UK

16.30-17.00 Coffee Break

## 9.3 Insecticides: Mode of action and resistance (II)

**Chairs:** Thomas Van Leeuwen, Ghent University, Belgium & Ralf Nauen, Bayer AG, Germany

10.20 9.3.8 **Dissecting insecticide resistance via genetic manipulation and genome modification in Drosophila**
J. Vontas, Institute of Molecular Biology and Biotechnology, Greece

10.40 9.3.9 **Molecular mechanisms of resistance to insecticidal acetyl-CoA carboxylase inhibitors in Bemisia tabaci**
R. Nauen, Bayer AG, Germany

11.00 9.3.10 **Monitoring of mutations that confer resistance to insecticides on Myzus persicae in potato crops in Wallonia**
J.P. Jansen, Walloon Agricultural Research Centre, Belgium

11.20 9.3.11 **Cuticle alterations and P450 detoxification are associated with deltamethrin and/or DDT resistance in Anopheles arabiensis populations from Ethiopia**
W. Dermauw, Ghent University, Belgium

11.40 9.3.12 **Molecular characterization of a novel target-site mutation in ABCC2 transporters in Cry1F resistant fall armyworm from Brazil**
D. Boaventura, University of Bonn, Germany

12.00 9.3.13 **Insecticide resistance in Tuta absoluta: Novel cases and new mechanisms**
E. Roditakis Hellenic Agricultural Organisation - 'Demeter', Greece

12.20 9.3.14 **Fitness costs of key point mutations that underlie acaricide targetβsite resistance in the twoβspotted spider mite Tetranychus urticae**
S. Bajda, Ghent University, Belgium

12.40-14.30 Lunch, Lunch Workshop and Poster Session

## 9.3 Insecticides: Mode of action and resistance (III)

**Chairs:** Ralf Nauen, Bayer AG, Germany & John Vontas, Institute of Molecular Biology and Biotechnology, Greece

14.30 9.3.15 **Major challenges in resistance management of agrochemicals, with special emphasis on the virtues of behavioral modifiers as alternative nontoxic strategies**
H.E. Hummel, J. Liebig-University Giessen, Germany

14.50 9.3.16 **Searching for new insecticide leads inspired by okaramine B**
D. Sattelle, University College London, UK

15.10 9.3.17 **Applications of monoterpenes for Tephritid fruit fly control and putative mode of action relevant to ligand-gated ion channels**
Q.X. Li, University of Hawaii at Manoa, USA

15.30 9.3.18 **Insecticidal and GABA antagonist activities of β-BHC analogues on which fluorine atom (F), chlorine one (Cl) or methyl radical (CH3) are additionally attached**
K. Tanaka, Kindai University, Japan

15.50 9.3.19 **Characterisation of the RDL A301S orthologous mutation in Plutella xylostella using CRISPR/Cas9**
Guest M., Syngenta Jealott's Hill International Research Centre, UK

16.10 9.3.20 **Flonicamid affects insect proprioception through serotonin receptors**
J. Huang, Zhejiang University, China

16.30-17.00 Coffee Break





## 1.6 Risk assessment vs. hazard based decision making

**Chair:** Mauricio Rodriguez, CropLife, Colombia

10.20 Opening remarks
M. Rodriguez, CropLife Latin America, Colombia

10.40 1.6.1 **Agrochemical Industry Development, trends in R&D and the impact of regulation**
M. Phillips, Agbioinvestor, UK

11.00 1.6.2 **Building risk mitigation capacities among authorities in Latin American countries**
M. Rodriguez, CropLife Latin America, Colombia

11.20 1.6.3 **Brazilian pesticide legislation and adoption of risk assessment**
M. Von Zuben, ANDEF, Brazil

11.40 1.6.4 **Risk assessment at the US EPA's Office of Pesticide Programs: Informing an effective decision-making process**
D. Miller, U.S. Environmental Protection Agency, USA

12.00 1.6.5 **An integrated approach to human health protection for chemical evaluation and risk assessment decisions**
D.C. Wolf, Syngenta Crop Protection, USA

12.20-14.30 Lunch, Lunch Workshop and Poster Session

## 1.7 Communicating science in an era of fake news

**Chair:** David Zaruk, Odisee University College, Belgium

14.30 Opening remarks
D. Zaruk, Odisee University College, Belgium

14.40 1.7.1 **Helping the press report on science**
T. Sheldon, Science Media Centre, UK

14.55 1.7.2 **Tackling fake news online**
Philip Weiss, ZN Consulting, Belgium

15.10 1.7.3 **Communicating hazard and risk in crop protection – The influence of transparency and concept change in human judgement**
J.J. Carvalho, Knoell Germany GmbH, Germany

15.25 1.7.4 **Bayer Crop Science, building society's trust through transparency**
C. Morr, Bayer AG, Germany

15.40 **Ten rules for better communication – Round-table discussion**
Facilitator: D. Zaruk, Odisee University College, Belgium

16.30-17.00 Coffee Break

APP

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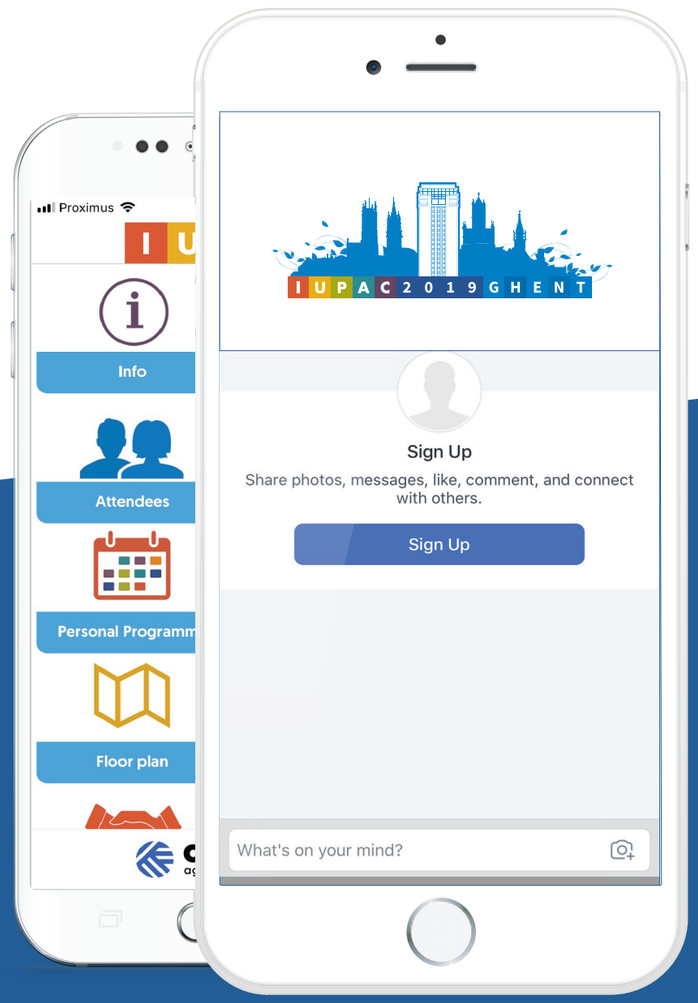


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POSTERS

THURSDAY

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## Posters topic 3
## Discovery and optimization of crop protection products

**P3.1** **The insect neuropeptide adipokinetic hormone as a test case for a "green" insecticide: Modelling ligand-receptor interaction**
G. Gäde, G. Jackson
University of Cape Town, South Africa

**P3.2** **Insecticidal isothiazolines: Managing between high biological efficacy and low photostability**
K. Koerber[1], P. Bindschaedler[1], A.M. Mueller-Cristadoro[1], F.J. Braun[2]
[1]BASF SE, Germany; [2]BASF Corporation, USA

**P3.3** **Cycloxaprid, a novel insecticide acting on insect nicotinic acetylcholine receptor**
Z. Li, X. Shao, X. Xu, J. Cheng, Z. Xu, X. Qian
East China University of Science and Technology, China

**P3.4** **Insecticidal sulfonimidamides: Synthesis and biological evaluation**
J. Dietz, R. Paulini, W. von Deyn
BASF SE, Germany

**P3.5** **Inscalis®: Synthesis of metabolites and labeled derivatives**
W. von Deyn[1], C. Koradin[1], R. Paulini, S. Sörgel
BASF SE, Germany

**P3.6** **A potential insect growth regulator for cockroach control: 3D-QSAR based optimization of allatostatin analogs**
M. Wang[1], X. Li[1], M. Chen[1], X. Wu[1], Y. Zhou[1], Z. Kai[2], X. Yang[1]
[1]China Agricultural University; [2]Shanghai Institute of Technology, China

**P3.7** **Use of thiadiazolium mesoionic compounds as insecticides**
O. Kuzmina, A. Narine, M. Weisel
BASF SE, Germany

**P3.8** **Broflanilide – A new mode of action insecticide**
T. Sikuljak[1], A. Arevalo[2], V. Salgado[2], C. Klein[2], S. Willingham[2], D. Liu[3]
[1]BASF SE, Germany; [2]BASF Corporation, USA; [3]BASF Taiwan Ltd., Taiwan

**P3.9** **3H-quinazolin-4-one-based pesticides: Mass screening helps to find novel hybrid chemotypes**
S. Gross, F. Kaiser, A. Narine
BASF SE, Germany

**P3.10** **Pocket-based lead optimization strategy to obtain chitinase inhibitors**
Y.W. Dong[1], Q. Chen[2], X. Zhao[1], S. Hu[1], X.J. Ma[1], Y. Qing[2], L. Zhang[1]
[1]China Agricultural University; [2]Dalian University of Technology, China

**P3.11** **The screening and discovery of new aphid control agent based on the structure of aphid and bee nAChRs**
H. Duan[1], Z. Yang[1], J. Zhang[1], X. Lu[1], S. Du[1], D. Song[1], B. Wang[2], X. Yang[1]
[1]China Agricultural University; [2]Chinese Academy of Agricultural Sciences, China

**P3.12** **Design, synthesis and acaricidal/insecticidal activities of 2,4-diphenyloxazoline derivatives containing heteroatom-methylene group at 4-phenyl moiety**
Y.X. Liu, Q.M. Wang
Nankai University, China

**P3.13** **Virtual screening and synthetic to obtain β-N-acetylglucosaminidase inhibitors**
S. Hu[1], X. Zhao[1], X. J. Ma[1], Q. Yang[2], L. Zhang[1]
[1]China Agricultural University; [2]Dalian University of Technology, China

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.14** **Benzpyrimoxan, a novel IGR insecticide for control of rice plant hoppers**
T. Aoki, K. Fukatsu, N. Yasokawa, K. Sakata, E. Satoh, R. Kasahara, H. Harayama, T. Murata, A. Suwa, S. Fujioka
Nihon Nohyaku Co., Japan

**P3.15** **Neuroexcitatory insecticidal quinolines – Resuscitation of an old compound class**
K. Koerber[3], R. Vallinayagam[1], H. Shind[1], G. Wahl[2], M.D. David[2], M. Griswold[2], V.L. Salgado[2]
[1]BASF Chemicals India Pvt Ltd, India; [2]BASF Corporation, USA; [3]BASF SE, Germany

**P3.16** **Insecticidal 3-Imino analogs of 5-amino-1,2,4-dithiazoles: Oximes, semicarbazones, and acyl hydrazones**
C. Holyoke, S.F. McCann, M. Xu, M.H. Tong, Y. Henry, T. Briddell, S. Chittaboina, R. Vallinayagam
FMC Agricultural Solutions, USA

**P3.17** **Discovery of oxazosulfyl**
M. Ito[1], Y. Nokura[1], M. Takahashi[2], H. Yamada[3], A. Iwata[1]
[1]Sumitomo Chemical Co; [2]Sumitomo Chemical Workers' Union; [3]Sumika Technoservice Corporation, Japan

**P3.18** **Bioactivity guided screening of plant extracts as a source of biopesticides for insect pest management**
S. Khan[1,2], C.N.T. Taning[2], E. Bonneure[2], S. Mangelinckx[2], G. Smagghe[2], M.M. Shah[1]
[1]COMSATS University Islamabad, Pakistan; [2]Ghent University, Belgium

**P3.19** **Spiropidion: Mode of biological activity against sucking pests**
A. Buchholz[1], W. Reiner[1], D. Stafford[2], F. Hatt[1], R. Senn[1], C. Popp[1], J. Schaetzer[1], T. Pitterna[1], M. Muehlebach[1]
[1]Syngenta Crop Protection, Switzerland; [2]Syngenta Jealott's Hill International Research Centre, UK

**P3.20** **Spiropidion: Chemistry and structure-activity profiles**
O. F. Hueter[1], J. Schaetzer[1], T. Pitterna[1], A. Buchholz[1], C.R. Godfrey[1], M. Goeghova[2], E. Godineau[1], P. Maienfisch[1], M. Muehlebach[1], T. Smejkal[1], W. Zambach[1]
[1]Syngenta Crop Protection, Switzerland; [2]Synkola, Slovakia

**P3.21** **The discovery of novel 1,3-disubstituted pyrazoles and their use as insecticides**
K. Hughes, T.F. Pahutski Jr., G.P. Lahm, O. Ahmad, D. Cordova, J. Barry, C. Keathly, K. Joraski
FMC Agricultural Solutions, USA

**P3.22** **Synthesis of isoxazoline bioisosters as insecticides**
M. El Qacemi, J. Cassayre, G. Berthon, M. Peiffer, R. Patre, D. Emery, P. Renold, F. Barreteau
Syngenta Crop Protection, Switzerland

**P3.23** **Asymmetric synthesis and quantitative structure–activity relationship of tetrahydroquinolines as potent ecdysone receptor ligands**
T. Yokoi, M. Ueno, Y. Nakagawa, H. Miyagawa
Kyoto University, Japan

**P3.24** **Synthesis and acaricidal activity of new 3-haloalkylsulfinyl-phenyl ether derivatives**
J. Suzuki, S. Onoue, D. Okamura, M. Onoue
Central Research Laboratories/Hokko Chemical Industry Co., Japan

**P3.25** **Iminodipyridinopyrimidines, a novel scaffold of potent chitinase inhibitors as promising leads in plant disease control**
P. Yuan[1], X. Jiang[2], Q. Yang[2], X. Qian[1]
[1]East China University of Science and Technology; [2]Dalian University of Technology, China

**P3.26** **Picarbutrazox: A novel fungicide for the control of oomycete diseases**
S. Watanabe, I. Urihara, T. Fujii, H. Yamanaka, H. Sano
Nippon Soda Co., Ltd., Japan

Monday | Tuesday | Wednesday | Thursday | Friday | **Posters Thursday**

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.28** **An acetamide containing an isothiazole moiety and its fungicidal activity against cucumber downy mildew**
L. Chen, Z.S. Hao, G. Wang, Q. Sun, J.F. Wang, H.B. Yang, H.B. Yu, B. Li
Shenyang Sinochem Agrochemicals R&D Co. Ltd., China

**P3.29** **4-aminopyrimidine hydrozones as PDHc-E1 inhibitors against fungal phytopathogens**
Y. Zhou, M. Cai, H.W. He
Central China Normal University Wuhan, China

**P3.30** **Revysol®: The highly active fungicide in row and specialty crops**
M. Semar[1], D. Strobel[1], M. Coquiller[1], G. Stammler[1], J. Barnes[2], L. de Paula Collette[3], J. Lee[4],
[1]BASF SE, Germany; [2]BASF Corporation, USA; [3]BASF S.A., Brazil; [4]BASF Company Ltd., South Korea

**P3.31** **PAVECTO® - A new QoI-fungicide: Hypotheses for the activity of tetrazolinone inhibitors against QoI-Resistant fungal strains from crystallography and molecular modelling**
I. Craig[2], G. Stammler[1], R. Bryson[1], J. Rheinheimer[3], C. Hunte[2], V. Pandey[2], W.-C. Kao[2], K. Klappach[1]
[1]BASF SE; [2]University of Freiburg, Germany

**P3.32** **Synthesis of Schiff base derivatives as potential antiviral agents for plants**
Y. Wang, F. Xu, D. Luo, S. Chen, G. Yu, F. He, J. Wu
Guizhou University, China

**P3.33** **Discovery of a new class of highly active fungicides to control rust diseases**
C. Winter, C. Wiebe, M. Fehr
BASF SE, Germany

**P3.34** **Design, synthesis and structure–activity relationship of novel isoxazolo[5,4-d]pyrimidinethylamine derivatives**
M. Li, J.C. Yang, J.Q. Sun, Z.N. Li, C.L. Liu
Shenyang Sinochem Agrochemicals R&D Co. Ltd., China

**P3.35** **Discovery and structure activity relationship of metyltetraprole**
S. Arimori, Y. Yoshimoto, Y. Matsuzaki, F. Iwahashi
Sumitomo Chemical Co., Japan

**P3.36** **Synthetic approaches towards Isoflucypram, a novel broad spectrum fungicide**
A. Becker[1], J. Benting[2], C.-A. Braun[2], P. Dahmen[2], P. Desbordes[3], C. Dubost[3], S. Gary[3], U. Goergen[2], H. Hadano[4], B. Hartmann[5], T. Knobloch[3], N. Lui[2], R. Meissner[2], S. Pazenok[2], R. Rama[3], A. Voerste[2], U. Wachendorff-Neumann[2]
[1]Bayer SA, France; [2]Bayer AG, Germany; [3]Bayer SA, France; [4]Bayer KK, Japan; [5]Bayer U.S., USA

**P3.37** **Novel N-cyclopropyl-N-[2-(1-R cyclopropyl)benzyl]pyrazole carboxamides for soybean Asian rust control**
P. Cristau[1], P. Desbordes[1], J. Geist[1], L. Nicolas[2], P. Rinolfi[1], J.P. Schmidt[2], T. Tsuchiya[1], J.P. Vors[1], U. Wachendorff-Neuman[2]
[1]Bayer SA, France; [2]Bayer AG, Germany

**P3.38** **Diaminopyrimidines – New agents to control leaf spot and grey mold**
G.C. Rudolf, V. Terteryan-Seiser, H. Schiffer, C. Winter, T. Grote
BASF SE, Germany

**P3.39** **Aminopyrifen: Synthesis and structure activity relationships**
R. Aizawa[1], M. Hatamoto[1], I. Okada[2], A. Honma[1], K. Araki[1], T. Fukuchi[1]
[1]Agro-Kanesho Co., Ltd.; [2]Tokyo University of Agriculture, Japan

**P3.40** **ADEPIDYN™, the discovery story of a novel SDH inhibitor**
D. Stierli[1], H.U. Haas[1], R. Rajan[2], H. Walter[1], M. Weiss[1]
[1]Syngenta Crop Protection AG, Switzerland; [2]Syngenta Biosciences Pvt. Ltd., India

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.41** **Chemical quorum quenching attenuates the virulence of the plant pathogen ralstonia solanaceaeum**
K. Kai[1], A. Yoshihara[1], M. Sakata[1], Y. Hikichi[2]
[1]Osaka Prefecture University; [2]Kochi University, Japan

**P3.42** **Synthesis and fungicidal activity of novel imidazole-based ketene dithioacetals**
C. Lamberth, S. Jeanmart, J. Gagnepain, F. Cederbaum, D. Bonvalot, R. Rajan, O. Jacob, M. Blum, S. Bieri, T. Hoffman
Syngenta Crop Protection AG, Switzerland; [2]Syngenta Biosciences Pvt. Ltd., India

**P3.43** **Design, synthesis and structure activity relationship studies of (R)-2-Phenyl-4,5-dihydrothiazole-4-carboxamide derivatives**
J. Liu[2], Y. Li[1], Z. Li[1]
[1]Nankai University; [2]Tianjin Agricultural University, China

**P3.44** **Synthesis and biological activity of novel succinate dehydrogenase based derivatives**
D. Yang, Z. Fan, X. Guo, B. Yu, N. Zhang, Q. Wu, S. Zhou, Z. Hao, Y. Lv
Nankai University, China

**P3.45** **Antiviral activity and mechanism study of gossypol and its Schiff base derivatives**
Y.Q. Li[1], B. Zhang[1], Q.M. Wang[1,2]
[1]Nankai University; [2]Collaborative Innovation Center of Chemical Science and Engineering, China

**P3.46** **Synthesis and biological study of ascaroside compound C6 and its analogues**
Y. Zheng, G. Song, J. Wang
East China University of Science and Technology, China

**P3.47** **Design of novel non-steroidal brassinolide-active compound by pharmacophore-based virtual screening**
Y. Nakagawa[1], S. Takimoto[1], M. Matsuo[1], S. Hinata[1], A. Sugiura[1], A. Yamagami[2], T. Nakano[2], H. Miyagawa[1]
[1]Graduate School of Agriculture/Kyoto University; [2]RIKEN Center for Sustainable Resource Science, Japan

**P3.48** **Phytoalexin phenalenone derivatives and analogues inactivate mosquito larvae and root-knot nematode as type-ii photosensitizer**
Q. Xu, Y. Feng, X. Shao
East China University of Science and Technology, China

**P3.49** **Exploring new class of chemical nematocides: Finding hits and its optimization**
H.S. Yeom, S.B. Kim, H.N. Lim, Y.H. Choi, G.J. Choi
Korea Research Institute of Chemical Technology, South Korea

**P3.50** **Degradation of a sprayable, biodegradable polymeric mulch in different soil types**
C.K. Borrowman[1], K. Saito[1], R. Adhikari[2], P. Johnston[2], A.F. Patti[1]
[1]Monash University; [2]CSIRO, Australia

**P3.51** **Simplified strigolactams as potent analogues of strigolactones for the seed germination induction of Orobanche cumana Wallr**
A. Lumbroso, C. Screpanti, M. Lachia, V. Paul, S. Rendine, R. Fonné-Pfister, A. De Mesmaeker
Syngenta Crop Protection AG, Switzerland

**P3.52** **The effect of 1-(3-phenyl-propyl)cyclopropene on the quality and storage life of tomato fruit**
J.S. Song[1,2], S.K. Yoo[3], D.S. Kim[1]
[1]Seoul National University; [2]Plasma Technology Research Center, National Fusion Research Institute; [3]Erum Biotechnologies Inc., Korea

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.53** **Malaria eradication, agricultural innovation and the ZERO by 40 initiative**
N. Hamon
IVCC, UK

**P3.54** **A novel pyrazolo[3,4-d]pyrimidine derivative induces disease resistance against Pst DC3000 in Arbidopsis thaliana through SA and JA defense signaling pathways**
Q. Shi[1], Y. Xu[1,2], X. Qian[1,3]
[1]East China University of Science and Technology; [2]Shanghai Polytechnic University; [3]East China Normal University, China

**P3.55** **Fumigation activity of AITC applied precisely by mechanization against eggplant root knot nematode**
W. Ma[1], X. Wang[2], C.L. Li[2]
[1]Beijing National Research Center of Intelligent Equipment for Agriculture; [2]Beijing Key Laboratory of Intelligent Equipment Technology for Agriculture, China

**P3.56** **Enantioselective effects of plant growth regulator paclobutrazol on Arabidopsis thaliana**
Y.H. Chan[1], J.H. Yen[1]
[1]National Taiwan University, Taiwan

**P3.57** **Discovery of herbicide safeners from nature products**
X.L. Deng[1], W.N. Zheng[1,2], L.Y. Bai[1,2]
[1]Hunan Academy of Agricultural Sciences; [2]Graduate School of Hunan University, China

**P3.58** **Design, synthesis and herbicidal activity of novel niacin-triketone derivatives as HPPD inhibitor**
S.Q. Zhang, J.Y. Wang, F. Ye, Y. Fu
Northeast Agricultural University, China

**P3.59** **Discovery of novel p-hydroxyphenylpyruvate dioxygenase inhibitors by virtual screening**
Y.X. Liu, Y.N. Sun, F. Ye, Y. Fu
Northeast Agricultural University, China

**P3.60** **Synthesis and safener activity of substituted diazabicyclo herbicide safeners**
Y.Y. Zhang, C. Wang, S. Gao, Y. Fu, F. Ye
Northeast Agricultural University, China

**P3.61** **Design, microwave-assistant synthesis of novel substituted phenylisoxazole formyl benzoxazines/ benzoxazoles as herbicide safener**
K.L. Guo, J.J. Li, Y. Fu, F. Ye
Northeast Agricultural University, China

**P3.62** **Herbicidal activity and application of 1- (furan-2-yl) methylphosphonates as PDHc inhibitor against broadleaf weeds**
H.W. He, H. Peng, X.S. Tan, J.L. Yuan
Central China Normal University Wuhan, China

**P3.63** **Chemistry, ADME studies and mode of action identification of a new class of PSII inhibitors**
D. Geerdink, S. Tresch, R. Campe, K. Kreuz, T.H. Seitz
BASF SE, Germany

**P3.64** **A target-based approach to the discovery of novel herbicides, based on inhibitors of phosphoribosylpyrophosphate amidotransferase (PRAT)**
T.W. Newton[1], T. Ehrhardt[2], J. Hutzler[1], R. Niggeweg[1], E. Hollenbach[1], S. Tresch[3], J. Wastl[4], M. C. Witschel[3]
[1]BASF SE; [2]Metanomics GmbH; [3]BASF SE, Germany; [4]Digital Science, UK

**P3.65** **Tolpyralate: Discovery and optimization of a novel herbicide for weed control in corn**
T. Okita, M. Tsukamoto, H. Kikugawa, S. Nagayama, T. Suganuma
Ishihara Sangyo Kaisha Ltd., Japan



Monday | Tuesday | Wednesday | Thursday | Friday | Posters Thursday

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.66** **Novel herbicidal agents based on a substituted pyrazole core with an unknown mode of action**
T. Müller, A. v. Almsick, D. Barber, C. Gardner, E. Gatzweiler, B. Kuhn, L. Ma, H. Menne
Bayer AG, Germany

**P3.67** **The PROVISIA® rice system: A new rice production system for grass weed control in rice**
B.A.B. Martins[1], L. Mankin[2], A. Landes[1]
[1]BASF, SE, APR/HA, Germany; [2]BASF, USA

**P3.68** **TIREXOR™ herbicide, a novel PPO inhibitor for managing herbicide-resistant weeds**
T. Seitz[1], R. Nielson[1], A. Porri [1], J. Lerchl[1], M. Witschel[1], G. Armel[2], S. Bowe[2], D. Findley[2]
[1]BASF SE, Germany; [2]BASF, USA

**P3.69** **Very long chain fatty acid (VLCFA) synthesis inhibitors for selective post-emergence control of grass weeds in barley, spring- and winter-wheat**
J. Hutzler[1], G. Kraemer[1], H. Kraus[2], N. Kreling[1], K. Kreuz[1], K. Reinhard[1], J. Major[3], A. Michrowska-Pianowska[1], T. Mietzner[1], T. Newton[1], L. Parra Rapado[1], D. Schachtschabel[1], T. Seiser[1], M. Sisay[1], U. Steinbrenner[1], V. Strauss[1], S. Tresch[1], V. Vogt[1], M. Witschel[1]
[1]BASF SE, Germany; [2]BASF, USA; [3]BASF, Singapore

**P3.70** **Biology of LUXIMO™**
H. Kraus[1], M. Witschel[2]
[1]BASF, USA; [2]BASF SE, Germany

**P3.71** **Utility of Effeeda for broadleaf weed control in wheat and barley**
Y. Amano, M. Kobayashi, R. Tamai, D. Yamawaki, Y. Nakano
Kumiai Chemical Industry Co., Japan

**P3.72** **Imine-amide bioisosterism applied to pyrimidines: Discovery of a new class of pyridazinone herbicides acting at phytoene desaturase**
T.M. Stevenson, M.J. Campbell, E.W. Reed
FMC Agricultural Products, USA

**P3.73** **Revival of forgotten herbicide areas enabled by modern cross-coupling techniques**
J.R. DeBergh, T.M. Stevenson
FMC Agricultural Solutions, USA

**P3.74** **Aryl pyrrolidinone anilides as a new mode-of-action herbicide class that interferes with pyrimidine biosynthesis**
K.A. Hughes, T.P. Selby, A.D. Satterfield, A. Puri, A.D. Travis, M.J. Campbell, A.E. Taggi
FMC Agricultural Solutions, USA

**P3.75** **Screening of growth inhibitors of root parasitic weeds targeting planteose metabolism**
A. Okazawa[1,2], A. Baba[1], T. Wakabayashi[2,3], Y. Sugimoto[2,3], D. Ohta[1]
[1]Osaka Pref. University; [2]JICA-JST; [3]Kobe University, Japan

**P3.76** **N-acylated homoserine lactone-derived tetramic acids as algicidal compounds**
S. Backx[1], F. Stock[1], S. Graff van Creveld[2], M. Syrpas[1], L. Blommaert[1,3], W. Stock[1], E. Ruysbergh[1], K. Sabbe[1], N. De Kimpe[1], A. Willems[1], A. Vardi[2], W. Vyverman[1], S. Mangelinckx[1]
[1]Ghent University, Belgium; [2]Weizmann Institute of Science, Israel; [3]Sorbonne University, France

**P3.77** **New azole-substituted N-aryloxazolidione herbicides for corn and soybeans**
S. De, T.P. Selby, C.P. Tseng, D.A. Travis, M. Ruggiero
FMC Agricultural Solutions, USA

## Posters topic 3
## Discovery and optimization of crop protection products

**P3.78** **Application of chemoinformatics in discovery of biopesticides based on agricultural waste plants**
J. Yao[1], Y. Huang[1], W. Xu[1], J. Hu[1], S. Jiang[1], J. Li[1], G. Dai[2]
[1]Chinese Academy of Sciences; [2]Shanghai Jiaotong University, China

**P3.79** **Advancements in pesticide safety assessment-generating data with fewer animals and with more relevance to humans**
S. Gehen, M. Corvaro, C. Terry
Corteva Agriscience, USA

**P3.80** **Towards smarter IPM with semiochemicals - How dispenser technology developed within the last five decades**
H.E. Hummel[1,2], B. Czarnobai de Jorge[3,4], J. Gross[3,4], M. Breuer[5]
[1]Justus-Liebig University Giessen, Germany; [2]University of Illinois Urbana-Champaign, USA; [3]Julius Kühn-Institut; [4]Technical University Darmstadt; [5]Weinbauinstitute Baden-Württemberg, Germany

**P3.81** **Comparing an integrated pest management with a chemical control strategy in multiple strawberry cultivations**
K. Stoffels, M. Vervoort, D. Baets, P. Melis, T. Van Delm
Proefcentrum Hoogstraten, Belgium

**P3.82** **Binding interactions of diuron and irgarol with PSII system reaction core of wild and diuron-resistant strains of a marine microalgae: Insights from molecular modelling**
J.-Y. Le Questel[1], S. Stachowski-Haberkon[2], R. Sussarellu[2], Z. Bouchouireb[1,2], J. Graton[1]
[1]Université de Nantes; [2]Ifremer, France

**P3.83** **Rational design of a parallel synthesis program for the optimization of antifungal HDAC inhibitors**
B. Merget, C. Wiebe, A. Koch
BASF SE, Germany

**P3.84** **The LOGAN project - Local crops as a natural resource for pesticides**
J. Geuens, M. Bosman
Karel de Grote University College, Belgium

**P3.85** **Predictive modeling approach for performance of co-formulants in agrochemical formulations**
C. Woelfle-Gupta[1], Y. Alencar Marques[1], S. Bhide[2]
[1]The Dow Chemical Company, USA; [2]Dow Chemical Int. Pvt. Ltd., India

**P3.86** **Elicitation with biomolecules induces differential defense responses in Arabidopsis cell suspensions**
E. Claverie, J.C. Cabrera
Materia Nova, Belgium

**P3.87** **Research and development of green pesticides in China**
X. Qian[1,2]
[1]East China Normal University; [2]East China University of Science and Technology, China

**P3.88** **Pre-screening strategies for early hazard identification**
A.P. Martins, G. Dean, D. Shaw, K. Barrett
Envigo, UK

**P3.89** **Measuring the interplay between uptake and loss processes of xenobiotics**
D. Sayer, M. Bronzato
Syngenta, UK

**P3.90** **New compounds with fungicide, nematocide and insecticide activity designed by molecular topology**
M. Galvez-Llompart[1,2], R. Zanni[1], R. Garcia-Domenech[1], J. Galvez[1]
[1]University of Valencia; [2]University of Malaga, Spain

## Posters Topic 4
## Formulation and application technologies

**P4.1** **Best practice for formulating products with multiple agrochemical actives**
W. Xu, C. Finch
BASF Corporation, USA

**P4.2** **Solving the chemical stability in agricultural formulations**
V. Dumontet[1], R. Acosta Amado[2], M. Li[2], J. Atkinson[3], B. Perez[4]
[1]Corteva Agriscience, France; [2]Corteva Agriscience, USA; [3]Corteva Agriscience, UK; [4]Corteva Agriscience, Brazil

**P4.3** **Surfactant self-assembly for complex agricultural formulations**
E. Shaw[1], K. Buchek[2], E. Weber[2], A. Brayton[2]
[1]Stepan Europe, France; [2]Stepan Company, USA

**P4.4** **Spatiotemporal dynamics of trunk injected imidacloprid, pyrimethanil and difenoconazole in apple trees**
C. Berger[1], A. Renier[2], L. Mediouni[1], F. Laurent[1]
[1]Université de Toulouse; [2]Cetev, France

**P4.5** **Effect of adjuvant selection on spray retention**
K. Min, C. Geng, S. Wilson, F. Admana, M. Francis, C. Young, J. McFadden
Corteva™ Agriscience, USA

**P4.6** **Mannosyl erythritol lipids – Biosurfactants for conventional pesticides**
P. Ravier[1], S. Deprey[1], W. van de Velde[2]
[1]Oleon SAS, France; [2]Oleon NV, Belgium

**P4.7** **A versatile surfactant for use in high electrolyte systems**
R. Franklin[1], A.R. Boracci[1], S. Zhu[1] F. Hermawanto[2]
[1]Nouryon, USA; [2]Nouryon, Singapore

**P4.8** **Impact of tank-mix adjuvants for the control of Asian soybean rust with a leading azol fungicide**
I.S.N. Dario[1], L. Bodelon[2], P. Baur[2], G.J.A. Dario[1]
[1]São Paulo State University, Brazil; [2]Clariant, Germany

**P4.9** **Mesoscale models to optimize formulation additives**
S. Köhler, S. Steiger, E. Schreiner, N. Shabelina, M. Bratz
BASF SE, Germany

**P4.10** **Searching for evidence: Development of a method to observe plant cuticular barrier properties**
P. Seufert[1], S. Staiger[1], K. Arand[1], A. Friedmann[2], C. Popp[3], M. Riederer[1]
[1]Julius Maximilian University Würzburg, Germany; [2]Syngenta Crop Protection Ag, Switzerland; [3]Syngenta Crop Protection Münchwilen AG, Switzerland

**P4.11** **Aliphatics or alicyclics: What is the permeation barrier of the plant cuticle to active ingredients?**
S. Staiger[1], P. Seufert[1], K. Arand[1], A. Friedmann[2], C. Popp[3], M. Riederer[1]
[1]Julius Maximilian University Würzburg, Germany; [2]Syngenta Crop Protection AG, Switzerland; [3]Syngenta Crop Protection Münchwilen AG, Switzerland

**P4.12** **UV stabilization of actives after application**
S. Nord, A. Simon, T. Schwaben, W. Mayer, N. Shabelina
BASF SE, Germany

**P4.13** **Novel multifunctional drift control agent**
S. Kamin, S. Sarkar, K. Visscher
Ashland Inc., USA

## Posters Topic 4
## Formulation and application technologies

**P4.14** **Compatibility agents for complex tank mix systems**
L. Le Bert, J. Sheehan, R. Totten
Stepan Europe, USA

**P4.15** **BIOPROD: Developing tailor-made formulation for a new generation of biopesticides**
J.C. Cabrera[1], S. Roosa[1], R. Wattiez[2], M. Houbraken[3], P. Spanoghe[3]
[1]Unité de biotechnologie-Materia Nova; [2]University of Mons; [3] Ghent University, Belgium

**P4.16** **Innovative silicone co-formulants: How to enhance foam control performances in agro formulations?**
E. Emond, F. Pochon, C. Leuci
Elkem Silicones France, France

**P4.17** **Enhancing soil mobility of fipronil by encapsulation**
B. Oschmann, M.R. Jung, K. Reinhard, C. Taranta
BASF SE, Germany

**P4.18** **Sustainable approaches to formulation development at Corteva™ agriscience**
J. Atkinson, M. Li, D. Wujek, R. Acosta Amado, K. Min, M. Somasi, M.M. Johnson
Corteva™ Agriscience, USA

**P4.19** **Biosurfactants as green adjuvants for agrochemicals**
T. Koshiyama[1], H. Tateishi[1], T. Eizuka[1], A. Saika[2], T. Fukuoka[2], T. Morita[2]
[1]kureha Corporation; [2]AIST, Japan

**P4.20** **Chemically stable & efficacious liquid formulations of sulfonylurea herbicides**
J.M. Groome[1], A.E. Goldsmith[1], M.S. Benhamouda[2]
[1]Battelle UK Ltd, UK; [2]Mitsui AgriScience International, Belgium

**P4.21** **High performance oil dispersion adjuvant exploration**
W. Lu, E. Ren
The Dow Chemical Company, China

**P4.22** **Genagen NBP: A distinguished water miscible solvent beyond being a replacement of NMP**
J. Aponte[1], R. Arnold[1], I.S.N. Dario[2], S. Giessler[1], T. Weick[1], P. Baur[1]
[1]Clariant, Germany; [2]São Paulo State University, Brazil

**P4.23** **The role of formulation inerts in the formation of fine droplets**
M. Nolte[1], T. Winger[2], M. Schwaben[1], T. Schwaben[1], A. Simon[1]
[1]BASF SE, Germany; [2]BASF Corporation, USA

**P4.24** **Challenges in formulation analytics**
I. Thamm, R. Förster
BASF SE, Germany

**P4.25** **Control of Dalbulus maidis in maize crop with electrostatic spraying**
J.P.A.R. Cunha, R.S. Marques, G.S. Alves
Federal University of Uberlândia, Brazil

**P4.26** **Tessior®system – A new SD formulation and special application device against esca disease of grapevine**
K.-H. Schneider[1], M. Nolte[1], A. Kühn[1], R. Zito[1], B. Blanz[1], S. Henkes[1], R. Rehkugler[2], J. Mogilewski[2], B. Stockburger[2], C. Winter[3]
[1]BASF SE; [2]MESTO Spritzenfabrik Ernst Stockburger GmbH, Germany; [3]FELCO SA, Switzerland

## Posters Topic 4
## Formulation and application technologies

**P4.27** **Mesoporous silica nanoparticles as nanocarriers for controlled pesticide release**
L. Cao, Q. Huang
Chinese Academy of Agricultural Sciences, China

**P4.28** **Drone application technology: Challenges and opportunities for formulation design**
Y. Sato[1], M. Faers[2]
[1]Bayer CropScience K.K., Japan; [2]Bayer AG, Germany

**P4.29** **Informing precision agriculture: Small-scale spatial variability in herbicide, weed, and crop dynamics**
S.K. Papiernik
USDA-ARS, USA

**P4.30** **Optimisation of a hyperspectral pushbroom camera setup for scanning leek plants in field conditions**
S. Appeltans, A. Guerrero, S. Nawar, J. Pieters, A.M. Mouazen
Ghent University, Belgium

**P4.31** **Relationship pressure-granulometry of agricultural sprays**
H.H. Boukhalfa, M. Belhamra
University Mohamed Khider-Biskra, Algeria

**P4.32** **INNOSETA - An H2020 European project to fill the gap between research and professional users in crop protection**
E. Gil[1], M. Gallart[1], P. Balsari[2], A. Koutsouris[3], S. Codis[4], D. Nuyttens[5], S. Fountas[3]
[1]Universitat Politècnica de Catalunya, Spain; [2]Universita degli Studi di Torino, Italy; [3]Agricultural University of Athens, Greece; [4]Institut Francais de la Vigne et du Vin, France; [5]Instituut voor Landbouw en Visserijonderzoek, Belgium

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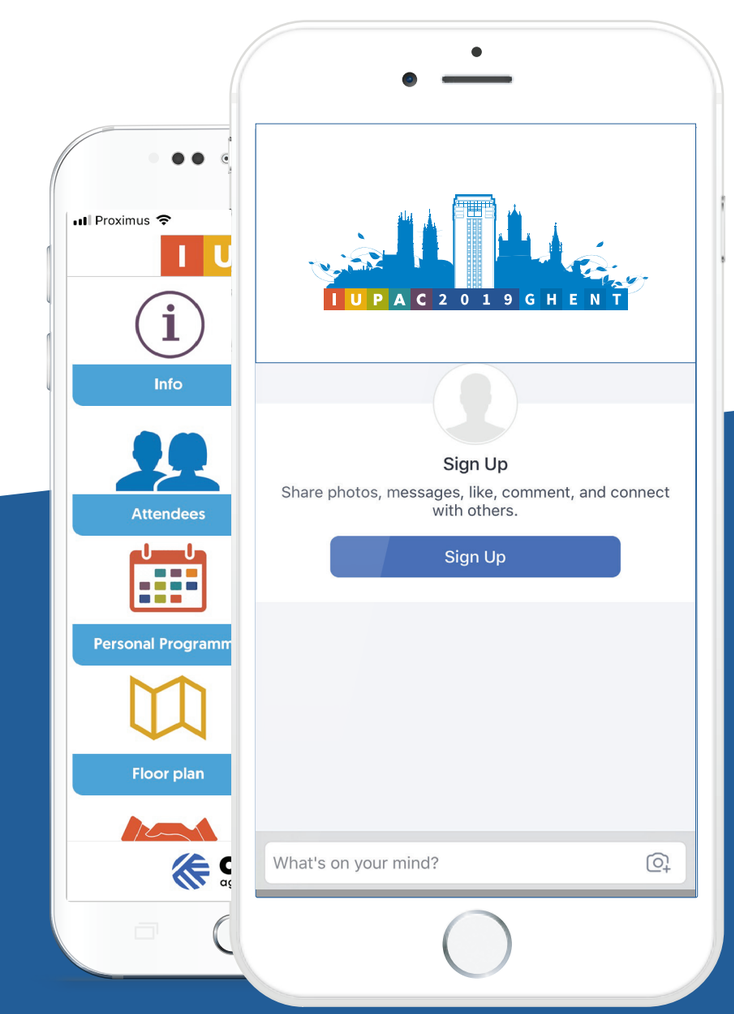


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IUPAC 2019

# PROGRAMME FRIDAY

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## Programme at a Glance - Friday, May 24

| | | Auditorium | Van Rysselberghe Room | Jan Van Eyck Room | Hubert Van Eyck Room | Van der Goes Room | Bauwens Room | Baekeland Room II |
|---|---|---|---|---|---|---|---|---|
| 08.00 | Presentations Upload | | | | | | | |
| 08.30 | | Plenary Talks<br>X. Qian<br>D. Zaruk | | | | | | |
| 09.40 | Coffee | | | | Coffee | | | |
| 10.20 | Parallel Sessions | Education of the next generation & Debate: Engaging the next generation for agriculture | | 3.5<br>New approaches to crop protection products: discovery tools, green chemistry (2/2) | 7.4<br>Advances in sampling methods and analysis and monitoring of agricultural chemicals | 3.6<br>Highlights from Poster Sessions - Short Presentations | 6.2<br>New approaches to sampling and monitoring | 7<br>Short oral poster presentations |
| 12.20 | | Poster Award Ceremony (Topics 3 & 4) | | | | | | |
| 12.30 | | Farewell:<br>The Movie | | | | | | |
| 13.00 | Lunch & Departure | | | | | | | |

## Plenary Talks

08.30 **Research and development of green pesticides in China**
Xuhong Qian, East China Normal University, China

09.05 **Block chain trust**
David Zaruk, Odisee University College, Belgium

09.40-10.20 Coffee Break

### Education of the next generation
**Chair:** Femi Oke, Moderate the Panel, USA

10.20 **How our Next-Gen Agri-summit winners see the future of Crop Protection** CropLife International

10.40 **Reflections on agrochemistry, society and economy**
Marc Van Montagu, Ghent University, Belgium

11.00 **Debate**

**Engaging the next generation for agriculture**
Yemi Adeyeye, YPARD, Italy
Marc Van Montagu, Ghent University, Belgium

11.40 **Ten little stories in Crop Protection Research to be written before our next IUPAC**
Pieter Spanoghe, Ghent University, Belgium

12.20 **Poster Award Ceremony**
Announcement of the poster award winners in topics 3 & 4.
FMC syngenta

12.30 **IUPAC Farewell: The movie**

13.00 Lunch and Departures



Monday | Tuesday | Wednesday | Thursday | **Friday Jan Van Eyck** | Posters

## 3.5 New approaches to crop protection products: discovery tools, green chemistry (II)
BASF We create chemistry
**Chairs:** Xuhong Qian, East China Normal University, China & Beth Lorsbach, Corteva Agriscience, USA

10.20 3.5.7 **Natural products: Most effective tool for creating green crop protection products**
K. Oyama, Meiji Seika Pharma Co., Japan

10.40 3.5.8 **Natural products: A source and inspiration for crop protection lead generation**
N.V. Garizi, Corteva Agriscience, USA

11.00 3.5.9 **Photochromic insecticides for insect behavior modulation**
X. Shao, East China University of Science and Technology, China

11.20 3.5.10 **Exploring the molecular recognition properties of insect nicotinic acetylcholine receptors competitive modulators through multiscale molecular modeling**
J.-Y. Le Questel, Université de Nantes, France

11.40 3.5.11 **A computational predictive approach for the discovery and optimization of new crop protection compounds**
B. Inbal, agPlenus Ltd., Israel

12.00 3.5.12 **The agrochemical discovery portal: New computational platform for efficiently study pesticide and target interaction**
G.F. Hao, Guizhou University, China

## 7.4 Advances in sampling methods and analysis and monitoring of agricultural chemicals

**Chairs:** Michele Hladik, United States Geological Survey, USA & Elizabeth Carazo, Costa Rica

10.20 7.4.1 **Pesticide monitoring studies in environmental samples: The most reliable sampling, extraction and analytical techniques over the last two decades**
Z. Vryzas, Democritus University of Thrace, Greece

10.40 7.4.2 **The TIMFIE sampler – A new time-integrating, active, low-tech sampling device for quantitative monitoring of pesticides in whole water**
O. Jonsson, Swedish University of Agricultural Sciences, Sweden

11.00 7.4.3 **Low-cost passive samplers to measure pesticide exposure of terrestrial and aquatic/terrestrial organisms**
M.L. Hladik, United States Geological Survey, USA

11.20 7.4.4 **The use of carbon based passive samplers coupled to an ASE/SPE/SPME GC-MSMS and LC-MSMS method for the quantification of pesticides in the atmosphere**
M. Millet, University of Strasbourg, France

11.40 7.4.5 **High-resolution Orbitrap mass spectrometry screening of pesticides residues in the Belgian part of the North Sea**
F. Vanryckeghem, Ghent University, Belgium

12.00 Discussion



Monday | Tuesday | Wednesday | Thursday | **Friday** Van der Goes | Posters

## 3.6 Highlights from Poster Sessions - Short Presentations

**Chairs:** Peter Maienfisch, Syngenta Crop Protection AG , Switzerland &
Sven Mangelinckx, Ghent University, Belgium

Highlights from the Topic 3 Poster Sessions will be presented by the authors as short presentations (5 minutes). Invitation will be made by members of the Topic 3 Scientific Committee during the poster sessions.

## 6.2 New approaches to sampling and monitoring

**Chairs:** Britt Maestroni, FAO/IAEA, Austria & Jose' Diana Di Mavungo, Ghent University, Belgium

10.20 6.2.1 **Variability on analysis results: Contributors inside and outside the laboratory**
H. Braeckman, Primoris, Belgium

11.00 6.2.2 **Trends in insecticide residue detections in U.S. produce commodities since passage of the Food Quality Protection Act in 1996**
A.S. Felsot, Washington State University, USA

11.20 6.2.3 **Risk-based reduction of human exposure to polycyclic aromatic hydrocarbons in smoked fish in Ghana**
K. Bomfeh, Ghent University, Belgium

11.40 6.2.4 **The role of the RALACA network in Latina America for food safety**
R.M. Loewy, R.M. Loewy, National University of Comahue, Argentina

12.00 Discussion





## Topic 7 Short Oral Poster Presentations

**Chair:** Piet Seuntjens, Ghent University, Belgium

10.20 P7.5 **Prediction of pesticides emission potential to atmosphere from their molecular properties using the typol tool**
K. Bonnot[1], C. Bedos[1], L. Mamy[1], C. Bockstaller[2], E. Latrille[3], D. Patureau[3], V. Rossard[3], R. Servien[4], P. Benoit[1]
[1]INRA-AgroParisTech-Université Paris-Saclay; [2]Université de Lorraine; [3]Université de Montpellier; [4]InTheRes, France

10.30 P7.9 **The degradation of crop protection products in Brazilian soils**
N. Baudin[1,2], M. Garrod[1], I. Bramke[1], C. Mckillican[3], G. Bending[2], S. Marshall[1]
[1]Syngenta Ltd.; [2]University of Warwick, UK; [3]Syngenta Crop Protection, USA

10.40 P7.24 **Application of the principles of green chemistry in residues analysis of pesticide chemical in water: 20 years experiences in Egypt**
M.A. Khalifa, M.A. Abbassy[2], A.H. Masoud[1]
[1]Kaferelsheikh University; [2]Damanhour University, Egypt

10.50 P7.34 **Behavior of the chiral herbicide imazamox in soils: Enantiomer composition differentiates between biodegradation and photodegradation**
I.J. Buerge, R. Kasteel, T. Poiger
Agroscope, Switzerland

11.00 P7.42 **Multidimensional modelling of reactive transport of plant protection products underneath vegetated filter strips**
R. Zolfaghari, K. Hammel, R. Sur, D. Schaefer
Bayer AG, Germany

11.10 P7.43 **Vegetative Filter Strip (VFS) modeling in the United States**
A. Ritter[1], D. Desmarteau[1], P. Hendley[2]
[1]Waterborne Environmental Inc., USA; [2]Phasera Ltd, UK

11.20 P7.46 **Modelling pesticides leaching in cropping systems: Effect of uncertainties in climate, agricultural practices, soil and pesticide properties**
S.K. Lammoglia[1,2], F. Brun[3], T. Quemar[3], J. Moeys[4,5], E. Barriuso[1], B. Gabrielle[1], L. Mamy[1]
[1]ECOSYS, INRA-AgroParisTech-Université Paris-Saclay; [2]CIRAD, SYSTEM; [3]ACTA, France; [4]Swedish University of Agricultural Sciences; [5]Swedish Chemicals Agency, Sweden

11.30 P7.47 **Efam: Automated modeling software for environmental risk assessment**
R. Juraske, P.P. Lenhardt, W. Reiher, T. Hauck
knoell Germany GmbH, Germany

11.40 P7.50 **Are landscape exposure models any good?**
G.O. Hughes, J. Carnall
Cambridge Environmental Assessments, UK

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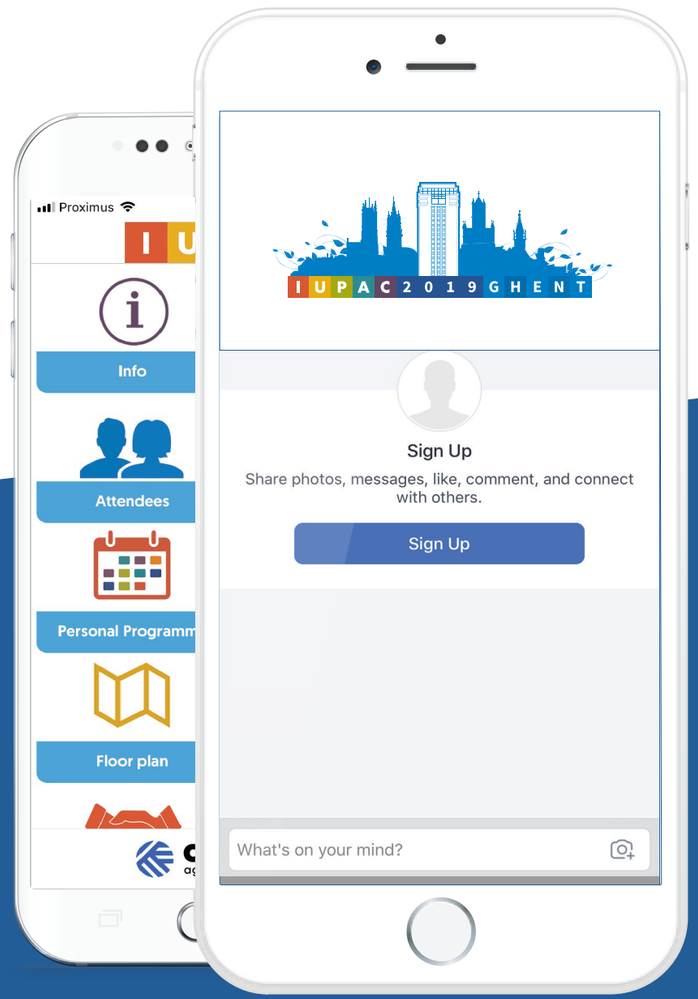


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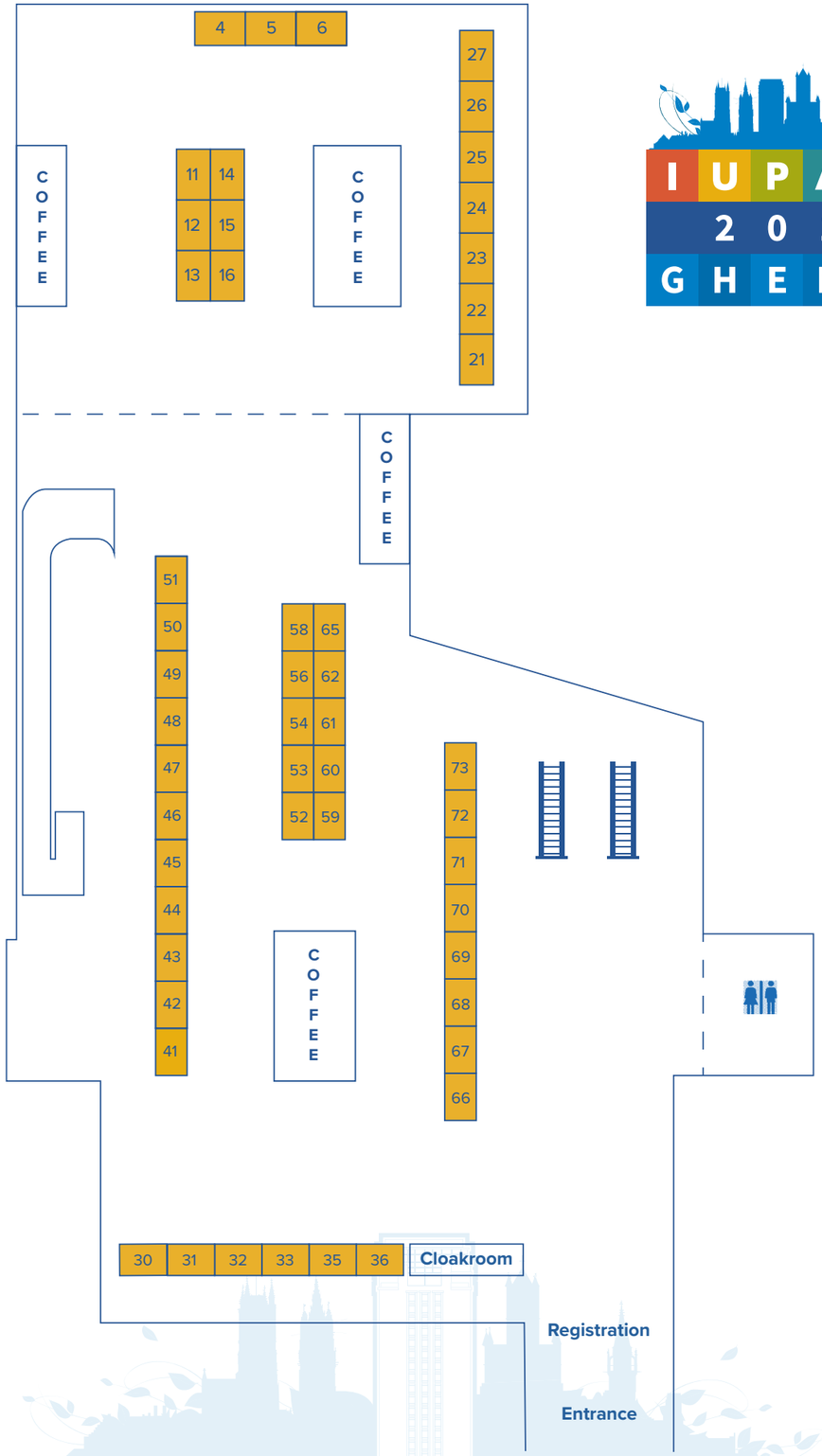


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| 6 | Blue Frog Scientific |
| 11 | BASF |
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| 15 | Corteva |
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| 21 | Eurofins |
| 22 | CEM Analytical Services |
| 23 | Regulatory Science |
| 24 | EBRC |
| 25 | ARCHE Consulting |
| 26 | CEHTRA |
| 27 | SCC |
| 30 | b+b Automations- und Steuerungstechnik |
| 31 | |
| 32 | Oxford Lasers |
| 33 | YPARD |
| 35 | Exponent |
| 36 | Concept Life Sciences |
| 41 | APC |
| 42 | Heinz Walz |
| 43 | Fera |
| 44 | Globachem |
| 45 | HPC Standards |
| 46 | Smithers Viscient |
| 47 | |
| 48 | Noack Laboratorien |
| 49 | IZOTOP |
| 50 | TSG Consulting |
| 51 | GAB Consulting |
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| 41 | APC |
| 25 | ARCHE Consulting |
| 65 | Ashland |
| 30 | b+b Automations- und Steuerungstechnik |
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| 11 | BASF |
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| 58 | Bayer |
| 6 | Blue Frog Scientific |
| 26 | CEHTRA |
| 22 | CEM Analytical Services |
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## Registration

### Congress Registration Fees On-Site

| | | |
|---|---|---|
| IUPAC & ECPA[1] | | 700 EUR |
| IUPAC | Participant | 600 EUR |
| | Student | 400 EUR |
| ECPA (May 22-23)[2] | | 600 EUR |
| ISCP (May 21)[3] | Participant | 300 EUR |
| | Student | 200 EUR |

[1]With full access to the ISCP programme on May 20
[2]With full access to the IUPAC programme on May 22-23
[3]With full access to the IUPA programme on May 21

### Social Events Registration Fees On-Site

| | |
|---|---|
| IUPAC Welcome Reception, May 19 | 0 EUR |
| IUPAC City Tour, May 20 | 15 EUR |
| IUPAC Field Excursion, May 22 | 50 EUR |
| IUPAC Banquet, May 23 | 50 EUR |

The registration fee includes:
- Access to all scientific sessions
- Access to the industrial exhibition
- Conference bag with programme, tourist and other information
- Daily Lunches and coffee breaks as announced in the programme

### Registration Desk

The registration desk of IUPAC 2019 is located on level 0 of the ICC.

On-site Registration Opening Times:

| | |
|---|---|
| Sunday, May 19 | 15.00 – 19.00 hrs |
| Monday, May 20 | 07.30 – 18.00 hrs |
| Tuesday, May 21 | 07.30 – 18.00 hrs |
| Wednesday, May 22 | 07.30 – 18.00 hrs |
| Thursday, May 23 | 08.00 – 18.00 hrs |
| Friday, May 24 | 08.00 – 13.00 hrs |

### Badges
Participants are obliged to wear the official IUPAC 2019 badges on all occasions.

### Lost Badges
Participants who lost their badge will have to register and pay anew.



## Social Activities

### Welcome Reception
From 18.00 until 19.00 hrs all participants and exhibitors are welcome in the exhibition halls (Arteveldeforum and Pedro De Gante Room) for drinks and snacks.

### City Tour
After a walk from the ICC to the city centre, we will embark for an enthralling boat tour on the waterways of the medieval centre of Ghent, with live or audio-guide, admiring its monuments:
1) St Bavo's Cathedral, the Belfry and St Nicholas' Church
2) old guildhalls of boatmen, masons, grain measurers, fishmongers, hagbutters, etc.
3) the Castle of the Counts and the Prince's Court
4) the old Fish Market facing the even older Meat Hall
5) the more than solid 13th-century monasteries previously occupied by Augustinians and Dominicans
6) the Ancient Port of Ghent with its quay walls and mercantile houses, never too far away from shady inns packed with girls of easy virtue, etc.

**Registration is mandatory.**

### Field Excursions
On Wednesday, the IUPAC programme ends between 12.00 and 12.40 hrs and the busses leave at 13.00 hrs to the various field excursions. Take-away lunch will be available on level 0 in the exhibition hall. Please note that eating is NOT allowed on the busses.
More information can be found in the App.

**Registration is mandatory.**

### IUPAC Banquet
Scheduled on the last evening of the IUPAC Congress, the IUPAC Banquet will be an ideal moment to discuss the experiences of the past week.
Immediately after the Congress, you are welcome in the Casino Room on level 0 for a 3-course dinner.

**Registration is mandatory.**

## General Information

### Venue
**International Convention Center Ghent (ICC)**
Van Rysselberghedreef 2 (Citadelpark)
9000 Ghent - Belgium
https://www.iccghent.com

### Language
The official language of IUPAC 2019 is English.

### Abstracts of Invited Lectures and Oral Presentations
The abstracts of the oral and poster presentations can be consulted via the mobile App or on the IUPAC website.

### Conventional Posters and ePosters
Conventional posters are on display at the Minneplein on level 1. Poster tours are organised on Monday, Tuesday and Thursday at lunch time (13.00 – 14.00 hrs).
ePoster corners are also installed at the Minneplein on the level 1 and can be viewed throughout the Congress.

### Speaker's Corner
Speakers with oral presentations are requested to upload their PowerPoints onto the central server system at least 2 hours prior to their scheduled presentations. The Speaker's Corner is located on level 1, next to the Auditorium.

### Coffee and Lunch
Coffee will be served in the exhibition halls on level 0. Lunch is included in the registration fee and is served in the exhibition halls on level 0.

### Disabled Persons
The International Convention Center Ghent is entirely wheelchair accessible.

### Cloakroom
A guarded cloakroom is available on level 0. Luggage can also be stored here.

### Liability
In registering for IUPAC 2019, participants agree that neither UGent nor the Organising Secretariat assume any liability whatsoever. Participants should therefore organise their own health, travel and personal insurances.

### Emergency Number
In case of emergencies (police, ambulance), dial 112.

### Social Media
Follow us on Facebook and Twitter and share your information using the official hashtag #IUPACNextGen.

### No photo/filming areas
In case you do NOT wish to be filmed or photographed during the IUPAC Congress, please take a seat at the back of the meeting rooms. During breaks, please go to the 'no photo' catering area.

### Mobile App
Download the IUPAC 2019 app in the App Store and Google Play by scanning the below QR-code.

Google Play

App Store

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