

Reinhardtsbrunn Symposium 2019
Preliminary Program January 2019

Sunday, April 7, 2019

- 17:00- Arrival, Registration
19:00
20:00- Welcome Reception with Evening Buffet
22:00

Monday, April 8, 2019

- 08:00 Opening: Holger B. Deising

Session 1: Fungicide resistance monitoring

Chair: Holger B. Deising

- 08:15 **Keynote 1: Susan Knight: Review of fungicide resistance management in Asia**
- 08:45 Bart **Fraaije**: SDHI sensitivity status of UK *Zymoseptoria tritici* and *Pyrenophora teres* field populations
- 09:05 Gilberto **Olaya**: Fluazinam sensitivity studies on the turf pathogen *Claviceps jacksonii* (= *Sclerotinia homoeocarpa*) in the United States
- 09:25 Alejandra **Vielba-Fernández**: Monitoring MBC-resistant isolates of the cucurbit powdery mildew, *Podosphaera xanthii*, using loop-mediated isothermal amplification (LAMP)
- 09:45 Maxime **Duvivier**: Tracking the spread of key mutations in *Zymoseptoria tritici* conferring resistance to the DMI and SDHI fungicides
- 10:05 Xili **Liu**: Point mutations in the β -tubulin of *Phytophthora sojae* confer resistance to Ethaboxam
- 10:25 **Coffee**

Session 2: Fungicide resistance monitoring

Chair: Andreas Mehl

- 10:45 Guilherme Rossato **Augusti**: Fungicide sensitivity in South American *Zymoseptoria tritici* field populations
- 11:05 Gerd **Stammler**: Evolution of SDHI adaptation in cereal pathogens in Europe
- 11:25 Joe **Mulhare**: Monitoring the sensitivity of *Ramularia collo-cygni* to the SDHI fungicides in Irish barley seed stock
- 11:45 Nenad **Trkulja**: Multi-resistance of *Cercospora beticola* to MBC, DMI and QoI fungicides
- 12:05 Kevin **King**: Continued azole sensitivity declines and evolution of PbCYP51 in UK populations of *Pyrenopeziza brassicae* (light leaf spot of oilseed rape)
- 12:25 Odile **Carisse**: Field monitoring for fungicide resistance: how to improve efficiency and reliability of sampling
- 12:45 **Lunch**

Session 3: Resistance management

Chair: Gerd Stammler

- 14:00 **Keynote 2 Claudia Godoy: Overcoming the threat of Asian soybean rust in Brazil**
- 14:30 Lise **Nistrup Jørgensen**: Eurowheat: Status for control of *Septoria tritici* blotch across Europe using azoles
- 14:50 Andreas **Mehl**: Spectrum and sensitivity impact of CYP51 and SDH target site mutations of *Phakopsora pachyrhizi* populations from seasons 2018/2019
- 15:10 Madeline **Dowling**: Benefits of multi-year resistance monitoring of *Botrytis cinerea* from strawberry fields in the Eastern United States
- 15:30 **Coffee**

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- 15:45 Mohamed F.R. **Khan**: Managing *Cercospora beticola* with resistance to multiple fungicides on sugar beet in the USA
- 16:05 Silvia Laura **Toffolatti**: Temporal analysis of mandipropamid resistance in *Plasmopara viticola* populations isolated from grapevine fields treated according to anti-resistance strategies
- 16:25 Paulo **Lichtemberg**: With stable sensitivity and no fitness disadvantage, the management of SDHI resistant mutants of *Alternaria alternata* will rely on an effective pistachio spray program
- 16:45 Frederike **Imbusch**: Relation between *Cercospora beticola* spore flight and leaf spot development after fungicide application according to disease thresholds and/or spore flight
- 17:05- **Poster Demonstration**
- 18:30 for details see below

Tuesday, April 9, 2019

Session 4: Molecular mechanisms of fungicide resistance

Chair: Helge Sierotzki

- 08:00 Anne-Sophie **Walker**: Mechanism of multidrug resistance and risk assessment towards fungicides in *Zymoseptoria tritici*
- 08:20 Anna **Huf**: DMI sensitivity of *Zymoseptoria tritici* and studies on contributing mechanisms in Europe
- 08:40 Iris **Eisermann**: A single amino acid exchange in the novel transcription factor Azr1 governs azole tolerance of *Fusarium graminearum*
- 09:00 Chaoxi **Luo**: Exploring mechanism of resistance to isoprothiolane in *Magnaporthe oryzae*
- 09:20 Yang **Zhou**: Development of a loop-mediated isothermal amplification method for the rapid diagnosis of *Venturia carpophila* on peach
- 09:40 **Coffee**

Session 5a: Molecular mechanisms of fungicide resistance

Chair: Bart Fraaje

- 09:55 Geunhwa **Jung**: SDHI mutations on in vitro sensitivity and field efficacy of SDHI active ingredients in *Sclerotinia homoeocarpa*, causal agent of dollar spot
- 10:15 Jürgen **Derpmann**: Characterization of fungicide resistant strains of *Sclerotinia sclerotiorum* and its' implication on stem rot control in oilseed-rape

Session 5b: Regulatory Aspects

Chair: Bart Fraaje

- 10:35 **Keynote 3** Ewa **Matyjaszczyk**: Registered doses of fungicides: seed dressing versus foliar treatment
- 11:05 Ulrich **Gisi**: Resistance risk for DMI fungicides in *Aspergillus fumigatus*: Potential hot spots
- 11:25 Nichola **Hawkins**: Parallel evolution of fungicide resistance in target and non-target fungi
- 11:45 Anne-Sophie **Walker**: Proposal for a simple and unified classification of pesticides
- 12:05 **Lunch**

- 13:15- Excursion
- 22:00

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Wednesday, April 10, 2019

Session 6: Fungicide Resistance: Mechanisms and Diagnosis in Dicot pathogens

Chair: Gerd Stammler

- 08:00 Hideo [Ishii](#): Differential pattern of cross resistance to SDHI fungicides and association with SDH gene mutations in *Corynespora cassicola*
- 08:20 Suzanne [McKay](#): Investigating the efficacy of Demethylation Inhibitor fungicides (DMIs) on combinations of *E. necator* isolates containing low or high ratios of WT and mutant (Y136F) cyp51
- 08:40 Mengjun [Hu](#): A 252-bp deletion in BcOS-1 consistently occurred in offspring mutants of *Botrytis* group S isolate 5d5, conferring resistance to fludioxonil
- 09:00 Sara [Villani](#): Incorporation of molecular tools to define practical fungicide resistance in the apple scab pathogen, *Venturia inaequalis*
- 09:20 Katia [Gazzetti](#): Sensitivity of *Stemphylium vesicarium* of pear to SDHs
- 09:50 James [Adaskaveg](#): Characterization of resistance to five SDHI sub-groups in *Alternaria* species causing leaf spot of almond in California
- 10:10 Coffee

Session 7: Resistance Modelling

Chair: Helge Sierotzki

- 10:30 Maxime [Garnault](#): Contrasted spatiotemporal dynamics of resistance and its drivers in the pathogenic fungus *Zymoseptoria tritici* in France revealed by statistical analysis
- 11:00 Martin [Urban](#): The Pathogen-Host Interactions database (PHI-base): Harnessing community expertise to determine anti-infective target sites
- 11:20 Nik [Cunniffe](#): Using epidemiological principles to explain fungicide resistance management tactics: Why do mixtures outperform alternations?
- 11:40 Neil [Paveley](#): Managing resistance evolving concurrently against two fungicide modes of action
- 12:00 Alexey [Mikaberidze](#): How can population biological principles inform management of fungicide resistance in crop pathogens?
- 12:20 Gerrit H.J. [Kema](#): Stress and sex: strobilurin resistance development in the context of epidemiology
- 12:40 Lunch

Session 8: Digital Pathogen Sensing and Topic 5 Resistance Risk Assessment

Chair: Erich-Christian Oerke

- 14:00 Keynote 4 Jon [West](#): Smart monitoring of airborne plant pathogens
- 14:30 Anne-Katrin [Mahlein](#): Sensing of wheat diseases in the field – an integrated approach from different scales
- 14:50 Guillaume [Fouché](#): Assessing the risk of resistance selection towards Qil fungicides in *Zymoseptoria tritici*
- 15:10 Alissa [Koehler](#): Characterizing *Macrophomina phaseolina* CYTB gene structure to assess resistance risk and document baseline fungicide sensitivities
- 15:30 Coffee

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Session 9a: Biorational fungicides / biocontrol

Chair: Erich-Christian Oerke

- 15:50 Keynote 5: Holger B. **Deising**: Are biologics and biologicals consumers' friends or foes? Plant disease control based on toxic microbial secondary metabolites
- 16:20 Lina **Šernaitė**: Inhibitory effect of natural products from *Anethum graveolens* against strawberry grey mold

Session 9b: Fungicide resistance and Topic 9 resistance management

Chair: Andreas Mehl

- 16:40 Stefano **Torriani**: Fungicide resistance evolution in soybean, a threat for disease control
- 17:00 Mônica A **Müller**: Adaptation of *Phakopsora pachyrhizi* to DMI, QoI and SDHI fungicide groups
- 17:20 David **Young**: Fenpicoxamid provides a new target site for control of *Septoria* leaf blotch in cereals
- 17:40 Semcheddine **Cherrad**: Resistance of *Plasmopara viticola* to complex III inhibitors: an overview on phenotypic and genotypic characterization of resistant's strains

Thursday, April 11, 2019

Session 10: New technologies and applications

Chair: Bart Fraaje

- 08:00 Keynote 6: Uwe **Conrath**: Bifunctional fusion peptide and microgel-based release system for plant health
- 08:30 Gero **Steinberg**: Live cell imaging of plant pathogenic fungi to develop new fungicides
- 08:50 Aline **Koch**: Exosome-like vesicles isolated from transgenic *Arabidopsis* expressing a long noncoding artificial dsRNA contain dsRNA-derived small RNAs
- 09:10 Jochen **Kleemann**: A new biochemical approach to study respiration of fungicide-resistant field mutants of phytopathogenic fungi
- 09:30 Melvin **Bolton**: Use of genome-wide association to identify mutations involved with DMI-resistance in *Cercospora beticola*
- 09:50 Kejal **Dodhia**: Faster than a football match: towards in situ disease and fungicide resistance quantification
- 10:10 Fran **Lopez**: High-throughput genotyping using digital PCR improves detection and quantification of fungicide resistance in *Blumeria graminis* f. sp. *hordei*
- 10:30 Coffee

Session 11: New Fungicides

Chair: Holger B. Deising

- 10:45 Dieter **Strobel**: Revysol® – the first Isopropanol-Azole
- 11:05 Kristin **Klappach**: Molecular insight into the binding of Pavecto® - A new QoI-fungicide: Crystallography and molecular modelling provide hypotheses for the activity of tetrazolinone inhibitors against QoI-resistant fungal strains
- 11:25 Yuichi **Matsuzaki**: Biological Profile of Pavecto® - A new QoI fungicide: Discovery of tetrazolinone chemical class and in vitro / in vivo analysis of the activity against QoI-resistant fungal strains
- 11:45 Daniela **Portz**: Isotianil - a new tool for the control of wheat blast caused by *Magnaporthe oryzae* *Triticum* / *Pyricularia graminis-tritici*, an emerging global threat
- 12:05 Marcus **Fehr**: The mitochondrial complex III inhibitor ametoctradin has an unusual binding mode
- 12:25 Farewell and Closing by Holger B. Deising
- 12:45 END of SYMPOSIUM

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Poster presentation

Monday, April 8, 2019 17:05 -18:30

Thies Marten Heick : Fungicide resistance in <i>Zymoseptoria tritici</i> and <i>Pyrenophora teres</i> in the NorBaARG region
Ricardo Feliciano dos Santos : Sensitivity of Asian grapevine leaf rust pathogen (<i>Phakopsora meliosmaemyrianthae</i>) to pyraclostrobin in Brazil
Richard Oliver : Catastrophy theory” – genome-informed classification of filamentous plant pathogens
David Young : Characterization of the benzamide binding site on β -tubulin by analysis of resistant mutants in <i>Aspergillus nidulans</i> and protein modeling
Agathe Ballu : Understanding the impact of alternation on resistance evolution by the mean of experimental evolution: the case of <i>Zymoseptoria tritici</i> , the causal agent of <i>Septoria</i> leaf blotch
Raffaello Zito : State of knowledge on molecular mechanisms leading to a reduced sensitivity of <i>Plasmopara viticola</i> towards ametoctradin and complex III inhibitors.
Annegret Schmitt : Replacement of Contentious Inputs in Organic Farming Systems (RELACS) – a comprehensive Horizon 2020 project
Rose Kristoffersen : IPM with cultivar mixtures
Pavĺína Jaklová : Testing of sensitivity of population of fungus <i>Venturia inaequalis</i> from selected orchards in the Czech Republic to the active substance pyrimethanil (Mythos 300 SC) according to the FRAC methodology
Stefan Jacob : Fungicide resistance towards fludioxonil conferred by overexpression of the phosphatase gene MoPTP2 in <i>Magnaporthe oryzae</i>
Aurélie Clinckemaille : Evolution of the sensitivity of Belgian <i>Zymoseptoria tritici</i> populations to DMIs and SDHIs through time or fungicides programs.
Fei Fan : Development and application of loop-mediated isothermal amplification in detection of fungicide resistance in <i>Botrytis cinerea</i>
Mei Luo : Development of an allele-Specific PCR for the detection of benzimidazoles resistance in <i>Monilinia fructicola</i>
Paulo Lichtemberg : Assessing the sensitivity levels of <i>Colletotrichum</i> spp. to multiple chemical groups with potential use to manage the persimmon anthracnose in Brazil
Guillaume Fouché : Contribution of active drug efflux to enhanced tolerance to new fungicides in the wheat pathogen <i>Zymoseptoria tritici</i>
Larisa Shcherbakova : In vitro enhancement of the sensitivity to tebuconazole in <i>Bipolaris sorokiniana</i> , a causative agent of cereal root rots, by a microbial metabolite 6-demethylmevinolin
Yuya Yoshimoto : Discovery of Pavecto® - A new QoI-fungicide: Synthesis and structure-activity relationships
Resna Nishad : Experimental investigation of chemical defense mechanism in Date palm against common fungal pathogens
David Bohnenkamp : Generation and application of a spectral library for scale and time independent disease detection of foliar diseases of wheat
Irene Maja Nanni : Dimethomorph activity on different Oomycete species of economic and veterinary interest
Irene Maja Nanni : Sensitivity of <i>Plasmopara viticola</i> populations and presence of specific and non-specific resistance mechanisms
Chuanhong Bian : Transcriptomic changes of <i>Rhizoctonia solani</i> AG1-IA in response to jinggangmycin A
Semcheddine Cherrad : A new biocontrol agent against grape downy mildew

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Ena Secic : Transcriptional and Post-Transcriptional Gene Silencing in the Defense Against Plant Pathogens
Katia Gazzetti : Sequence and properties of the draft genome of <i>Stemphylium vesicarium</i>
Gary Secor : Monitoring Sensitivity of <i>Cercospora Beticola</i> to Foliar Fungicides
Tatiana Vlasova : The resistance of <i>Verticillium dahliae</i> to cotton phenolic compounds in the model system
Anna Brugger : Extension of hyperspectral imaging to the UV-range for sugar beet-pathogen interaction
Greta Battistini : Sensitivity of Italian <i>Zymoseptoria tritici</i> isolates to azoxystrobin and pyraclostrobin
Steven Kildea : Sensitivity of Irish <i>Blumeria graminis</i> f.sp. avenae populations to the QoI fungicides and implications for the efficacy of the QoIs under field conditions
Nicola Cook : Novel Strategies for Monitoring Fungicide Resistance in Cereal Pathogens
Wesley Mair : Multiple mechanisms account for demethylase inhibitor fungicide control failure in the barley pathogen <i>Pyrenophora teres</i> f. sp. <i>maculata</i>
Julie Smith : Quantifying the field efficacy of mefentrifluconazole ('Revysol') against highly evolved strains of <i>Zymoseptoria tritici</i>
Bronislava Hortová : Biological control of apple scab (<i>Venturia inaequalis</i>) by biostimulants
Regula Frey : The evolution of <i>Zymoseptoria tritici</i> sensitivity to triazole fungicides
Martin Schuster : Life Cell Imaging provides new insights into the mode of action of Azoles
Anja Milosavljevic : Sensitivity Monitoring of <i>Cercospora Beticola</i> to Fungicides in Serbia
Irina Ageeva : Multifactor Effects of Fullerens of Shungite on the Morphology and Heterogeneity of <i>Verticillium Dahliae</i>
Tatyana Yurina : Application of Benomyl for Control of Phytopathogenic Diseases of Agricultural Plants
Fengping Chen : Metalaxyl resistance in <i>Phytophthora infestans</i>