

Resistance 2024 – Programme

Monday 23rd – Wednesday 25th September 2024

Please note that only speakers are listed below. See abstracts for all authors and affiliations.

Monday 23rd September

Coach transport from Premier Inn, Luton (7.45), Luton Hoo (8.00) and Aubrey Park (8.00) to Rothamsted Research

8.15 Registration and refreshments

Session 1: Opening, Industry and Policy positions: Chair: Julian Smith

9:00 Julian Smith

9.05 Welcome and introduction: Angela Karp, Director and CEO, Rothamsted Research

9.15 Gideon Henderson, Chief Scientific Adviser, Defra
Title of talk

9.45 Andy Ward, CropLife RMPT (for RACs)
Putting resistance management into action: An industry perspective

10.15 9 or 10 x 2 min Poster Previews (for list see page 7)

10.45 Refreshments

Session 2 Chair: Lin Field

Molecular Mechanisms and Genomics

11.30 Invited Speaker: Bartłomiej Troczka, University of Exeter, UK
Organophosphate resistance in *Myzus persicae*: exploring new discoveries in the genomic era

12.00 Daniel Swale, University of Florida, USA
The K⁺/Cl⁻ cotransporter represents a putative target to reduce resistance to dieldrin (rdl)

12.20 Yuichi Matsuzaki, Sumitomo Chemical, Japan
The delay in confirming QoI-resistance in *Puccinia horiana* in Japan: overlooking risks beyond the G143A and F129L mutations

12.40 Nawaporn Onkokesung, Newcastle University/Bayer AG Germany
Counteract herbicide resistance through herbicide selectivity: a case study on selective herbicide safening in *Arabidopsis thaliana*

13.00 Lunch

Session 3 Chair: David Comont

Molecular Mechanisms and Genomics

14.00 Invited speaker: Dana MacGregor, Rothamsted Research, UK
Exploring the resilience and adaptability of agricultural weeds

14.30 Sabine Fillinger, INRAE, France
Multi-drug resistance in the fungal wheat pathogen *Zymoseptoria tritici*: a hint to complex mechanisms

14.50 David Heckel, Max Planck Institute for Chemical Ecology, Jena, Germany
Genetics of insect resistance to Vip3Aa

15.10 Satoshi Iwakami, Tokyo University of Agriculture and Technology, Japan
A new player involved in metabolic resistance in *Echinochloa crus-galli*

15.30 Refreshments

Session 4 Chair: Kevin King

Molecular Mechanisms and Genomics

16.00 Invited speaker: Dolores Fernández-Ortuño, Universidad de Málaga, Spain
Searching for new “biofungicides” based on oligonucleotides for the control of fungal diseases

16.30 Ben Hunt, University of Exeter, UK
Sub-lethal insecticide stress alters epimutation rate and transposable element expression, but not mutation rate, in *Myzus persicae*

16.50 Katherine Zulack, Curtin University, Australia
Tiny tech, big impact: long read sequencing in the fight against fungicide resistance

17.10 Deepak Kaundun, Syngenta, UK
Identification of a single glutathione-S-transferase gene associated with atrazine resistance in *Amaranthus palmeri*

17.30 Poster viewing and wine reception

18.45 Hot buffet dinner

20.15 Coach transport from Rothamsted to Luton Hoo, Aubrey Park and Premier Inn

Tuesday 24th September

Coach transport from Premier Inn, Luton (7.45), Luton Hoo (8.00) and Aubrey Park (8.15) to Rothamsted Research

8.30 Refreshments

Session 5 Chair: Steve Foster

Evolution, Selection and Monitoring

9.15 Invited speaker: Leena Lindström, **University of Jyväskylä**, Finland
Sublethal exposure to pesticides and transgenerational plasticity in insect pest *Leptinotarsa decemlineata*

9.45 Andreas Mehl, Bayer AG, Germany
Multiple resistance of important oomycetes - An increasing threat for resistance management in times of limited chemical options

10.05 Ulrich Lutz, Max Planck Institute for Biology Tübingen, Germany
Target-site resistance diagnosis reimaged: a new high-throughput method and its application to analyze hundreds of weed populations

10.25 Joshua Thia, University of Melbourne, Australia
Genetic architecture of pesticide resistance in the mite, *Halotydeus destructor*, from its invasive Australian range

10.45 Refreshments and poster viewing

Session 6 Chair: Richard Hull

Evolution, Selection and Monitoring

11.10 Invited speaker: Julia Kreiner, University of Chicago, USA
Quantifying selection on and origins of resistance mutations through space and time

11.40 Phil Madgwick, Syngenta, UK
Updating the principles of resistance management: a new theoretical framework

12.00 Przemyslaw Kowalski, BASF SE, Germany
Adaptation of *Ramularia collo-cygni* towards SDHIs and DMIs

12.20 Alfredo Manicardi, Universidad de Lleida, Spain
Characterization of multiple herbicide resistant populations of *Amaranthus palmeri* from Europe

12.40 Lunch

13:30 Resistance Action Committee Panel Session: Co-Chairs: Julian Smith/Lin Field

John Wiles (Corteva) - IRAC, Andreas Mehl (Bayer) – FRAC, Caio Rossi (Corteva) - HRAC

Session 7 Chair: Pradip Songara

Evolution, Selection and Monitoring

14.30 Invited speaker: Nichola Hawkins, NIAB, UK

Predicting fungicide resistance by experimental evolution

15.00 Célia Neto, University of Copenhagen, Denmark

The evolutionary journey of herbicide resistant *Alopecurus myosuroides* from wild to weed

15.20 Neil Hobbs, Swiss Tropical and Public Health Institute, Switzerland

Development and application of a coupled population dynamics and population genetics mathematical model to link insecticide selection, fitness costs and vector control

15.40 Irene Maja Nanni, University of Bologna, Italy

Droplet digital PCR: a new molecular approach for the detection and quantification of SDHI mutations in *Stemphylium vesicarium*

16.00 Refreshments and poster viewing

Session 8 Chair: Laura Crook

Field Studies and IPM

16.30 Invited speaker: **Mette Sønderskov - Aarhus University, Denmark**
Monitoring and management of herbicide resistance in Denmark

17.00 Stephen Foster, Rothamsted Research, UK

Update on insecticide resistance in UK pests: are we all doomed?

17.20 Leon Hodgson, Curtin University, Australia

Management drives regional level spatial distribution of demethylase inhibitor fungicide resistance in *Pyrenophora teres* f. *teres*: insight from neighbour network analysis

17.40 Silvia Panozzo, CNR, Italy

Living Lab to promote innovation in weed management in Italian agricultural crops

18.00 End of day

18.30 Coach travel from Rothamsted to Luton Hoo Hotel

19.00 Pre-dinner drinks at Luton Hoo Hotel

19.45 Conference Dinner at Luton Hoo Hotel

21.45 Coach travel from Luton Hoo Hotel to Aubrey Park and Premier Inn, Luton

Wednesday, 25th September

Coach transport from Premier Inn, Luton (7.45), Luton Hoo (8.00) and Aubrey Park (8.15) to Rothamsted Research

8.30 Refreshments

Session 9 Chair: Joe Helps

Field Studies and IPM

9.15 Invited speaker: Fiona Burnett, Scotland's Rural College (SRUC), UK
Fungicide resistance stewardship: opportunities to identify and drive best practice

9.45 Roberto Busi, University of Western Australia
How we best manage resistance? A case study with glyphosate and paraquat resistant *Lolium rigidum*

10.05 Jean Leon Mugenzi, Syngenta, Switzerland
Characterization of a multi-resistant field population of *Plutella xylostella* from Taiwan

10.25 Lawrence Veryser, Certis Belchim, Belgium
Integrated approach for potato late blight resistance management and stewardship

10.45 Refreshments and poster viewing

Session 10 Chair: Patry Ortega-Ramos

Field Studies and IPM

11.10 Invited speaker: Jo Lines, London School Hygiene and Tropical Medicine, UK
The WHO's "Global Plan for Insecticide Resistance Management in Malaria Vectors"

11.40 Isabel Corkley, Rothamsted Research/ADAS/University of Reading, UK
Which resistance management strategies work against concurrent evolution of resistance to fungicides?

12.00 Sacha White, ADAS, UK
Testing insecticide resistance management strategies

12.20 Roland Beffa, Germany
Herbicide resistance stewardship. Contribution of mechanistic and random forest models to support diagnostic

12.40 Concluding remarks – Julian Smith

12.50 Lunch and depart