THE UNIVERSITY OF WESTERN AUSTRALIA

AHRI AUSTRALIAN HERBICIDE RESISTANCE INITIATIVE - a GRDC initiative -

Centre for Crop and Disease Management

GRDC Grains Research & Development Corporation | Curtin University

$66

Cropping and Resistance

Places are limited!

The 2015 Crop Protection Forum will highlight current pesticide resistance research.

Monday 23rd November, 2015
8.30 am to 5.30 pm
Ernst & Young Lecture Theatre, UWA

$66/head includes morning coffee/tea, lunch, afternoon coffee/tea & sundowner.

Register by Friday 13th November, 2015
www.ahri.uwa.edu.au/cropprotect

TIME	SUBJECT	PEOPLE
SESSION 1		**Chair: Prof Stephen Powles (AHRI)**
0830	Welcome	Profs Stephen Powles & Mark Gibberd
0840	AHRI: Glyphosate resistance globally and regionally	Prof Stephen Powles
0910	CCDM: Fungicide resistance in WA	Dr Fran Lopez-Ruiz
0940	AHRI: Resistance to pre emergent herbicides	Dr Roberto Busi
1010	Morning break	
SESSION 2		**Chair: Prof Mark Gibberd (CCDM)**
1030	CCDM: Barley powdery mildew resistance - will it happen to wheat?	Dr Madeline Tucker
1100	CCDM: Weed shifts with intensive cropping	Dr Michael Ashworth
1130	DAFWA: Redlegged earth mite & Diamondback moth - resistance & control	Ms Svetlana Micic
1200	AHRI: 2,4-D resistant weeds in WA	Dr Danica Goggin
1230	Lunch	
SESSION 3		**Chair: Mr Peter Newman (AHRI)**
1330	CESAR: Green Peach aphid resistance & management	Dr Paul Umina
1400	CCDM: From weeds to disease – the need for diversity	Dr Michael Ashworth
1430	CCDM: The economics of managing fungal diseases	Dr Amir Abadi
1500	AHRI: Herbicide resistance mechanisms & genetics	Dr Qin Yu
1530	Afternoon break	
1550	AHRI: Non chemical tools to help sustain herbicides	Dr Michael Walsh
1630	Discussion and wrap up	Mr Peter Newman
1700	Sundowner	

Are you interested in staying up to date with weeds, pests & disease research?

If the answer is yes, the inaugural **Crop Protection Forum** is an opportunity to learn about resistance and how to blunt its evolution.

The **Australian Herbicide Resistance Initiative (AHRI)** is partnering with the new **Centre for Crop & Disease Management (CCDM)** to deliver key messages from their latest research at this event to be held at **The University of WA on Monday 23rd November, 2015**.

An increasing occurrence of pests throughout our cropping system and subsequent resistance problems are threatening crop yields. Senior researchers from **AHRI**, **CCDM**, **University of Melbourne** and **DAFWA** will provide insights into their research to control weeds, pests and disease, whilst also providing practical recommendations to maintain the efficacy of current practices.

The forum will also be an opportunity for participants to discuss impending resistance problems and how to ensure that we secure agriculture against biological threats.

Cropping and Resistance

Speaker bios

(in order of appearance)

Prof Stephen Powles

As the Director of the Australian Herbicide Resistance Initiative (AHRI), Professor Powles is an international authority on all aspects of herbicide resistance in plants, from a basic biochemical understanding, through to practical on-farm management. He is a Fellow of the Australian Academy of Science and the Australian Academy of Technological Sciences, and one of the world's most highly cited plant scientists (ISI highly cited.com).

Prof Mark Gibberd

Prof Mark Gibberd has led CCDM since its establishment in 2014 and co-led the negotiation of the GRDC/Curtin Bilateral Agreement. He has been a Curtin University employee for more than 10 years in various roles including Head of the Department of Environment and Agriculture as well as Chair of Viticulture and Oenology at Curtin's Margaret River Education Campus. Following his graduation with a PhD from UWA in 1997 Mark completed Postdoctoral Research fellowships with CSIRO Plant Industry at Floreat (Perth, WA) and Merbein (Mildura, Victoria) prior to being appointed as a Research Fellow with CSIRO Plant Industry in 2001, working across a range of crops and production environments.

Dr Fran Lopez-Ruiz

Dr Fran Lopez-Ruiz has been studying fungicide resistance since 2002 and completed his PhD at University of Malaga (Spain) and The John Innes Centre (UK) in 2010. Since joining Curtin University in 2011, Fran has led the Fungicide Resistance Group, which aims to understand how fungicide resistance develops and how to improve the management of fungicides to reduce the impact of diseases in the field. He has played a pivotal role in the discovery of fungicide resistance in barley powdery mildew, providing extension messages on how to manage resistance and helping to fast track the release of new fungicides. He currently tests fast, accurate and reliable technology to monitor fungicide resistance in the field, to help prevent disease reaching epidemic levels.

Dr Roberto Busi

Dr Roberto Busi is a Research Fellow in AHRI, and conducts research on the evolutionary dynamics of herbicide resistance – to discover and understand why and how weeds can evolve resistance so fast. Over the past six years, his research has focused on the impact of using low herbicide rates, and in a world first, established that persistent use of the pre-emergent herbicide Sakura (pyroxasulfone) at low rates can lead to rapid resistance evolution in annual ryegrass.

Dr Madeline Tucker

Dr Madeline Tucker joined the then Curtin's Australian Centre for Necrotrophic Fungal Pathogens (ACNFP) in 2008 as a research assistant where she first started to delve into the realm of fungicide resistance. Recently she completed her PhD and confirmed the first case of fungicide resistance in a crop pathogen in Australia and then went on to dissect the mechanisms of fungicide resistance in the barley powdery mildew pathogen population in WA. Madeline has now taken up a post-doctoral position within CCDM where she continues to hone her skills and interests on fungicide resistance in other economically important fungal species in Australia.

Dr Michael Ashworth

Dr Mike Ashworth came from a broadacre cropping background and completed a PhD with the Australian Herbicide Resistance Initiative (AHRI), focusing on glyphosate resistant wild radish. Mike has subsequently moved to the Centre for Crop and Disease Management at Curtin University, recently taking up a position as a research agronomist. In this role, he hopes to apply the lessons learnt in weed resistance management at AHRI to fungal disease management, to improve the performance and sustainability of fungicides and disease resistant cultivars.

Ms Svetlana Micic

Ms Svetlana Micic is a research officer in crop protection (entomology) with the Department of Agriculture and Food, WA and has established a reputation for solving the state's major crop pest problems. Svetlana has an important leadership role in the regional delivery of broadacre pest management research and development activities, with active involvement in collaborative national projects. She is currently working on determining how wide spread redlegged earth mites (RLEM) resistance is in WA as well as exploring post-harvest controls for small conical snails.

Dr Danica Goggin

Dr Danica Goggin is a Research Associate with AHRI and works in the field of plant biochemistry. Danica is currently working on an Australian Research Council funded project characterising the biochemical basis of resistance to the auxinic herbicide 2,4-D in wild radish. While at AHRI, she has also investigated the mechanisms of dormancy release and maintenance in annual ryegrass seeds, particularly in relation to the interaction between light and dormancy-mediating hormones.

Mr Peter Newman

Mr Peter Newman is part of the AHRI communications team and has previously worked in the private industry as an agronomist and as research officer for DAFWA. Peter joined AHRI in 2013 and is based in Geraldton, WA. Peter's role involves taking AHRI research, as well as other information about managing herbicide resistant weeds, and communicating it to the Australian grains industry.

Dr Paul Umina

Dr Paul Umina is with the School of BioSciences at The University of Melbourne, where he leads the Sustainable Agriculture team at CESAR. Dr Umina's work strikes a balance between innovative research, engagement and commercial application. He has conducted a diverse array of field and laboratory-based research on ecological, molecular and environmental management issues. Paul leads several national projects and has made several important discoveries, including the way numerous insects reproduce, discovering insecticide resistance in crop pests, and identifying natural ways to control insect pests using beneficial insects. His research has significantly advanced the way other scientists and researchers approach pest management in Australia, particularly in the grains industry.

Dr Amir Abadi

Dr Amir Abadi is an agricultural scientist specialising in industry development and capacity building in farming systems. His economic research and decision analysis modelling accounts for risk and uncertainty, with the ultimate aim of enhancing managerial decisions. He leads the Improved Farming System Program at CCDM, where he focuses on a suite of national research projects with express mission of enabling growers and advisors to reduce economic loss from diseases and improve commercial viability of grain production. Before joining CCDM and Curtin University, Amir was senior principal scientist at the Department of Environment and Conservation, the Department of Agriculture and Food as well as three Cooperative Research Centres, focusing on business analysis and industry development of food and fibre, and the emerging bioenergy feedstock and biofuel crops.

Dr Qin Yu

Dr Qin Yu is a Senior Research Fellow at AHRI researching the biochemical and molecular basis of herbicide resistance. Dr Yu's expertise also includes environmental stress, plant physiology and biochemistry. Dr Yu has focused her expertise on exploring herbicide resistance biochemistry and molecular biology. Her research effort improves the understanding of, and provides new insights into, the diversity and complexity of the biochemical/molecular basis of herbicide resistance in cross-pollinated weed species, and resistance evolution in diploid versus polyploidy species.

Dr Michael Walsh

Dr Michael Walsh is a Senior Research Fellow at AHRI. Dr Walsh's research over the past five years shows that during grain crop harvest a significant proportion of the seed produced by weed populations is collected by harvesters, and then redistributed back across the field. By intercepting this seed and making it non-viable at this point, a considerable fraction of the following years weed population is controlled. This work has realised the introduction of mechanical weed control systems particularly the development and commercialisation of the Harrington Seed Destructor. Dr Walsh is also involved in screening new herbicides for wild radish weed control in Australian cropping systems.