

The Role of Plant Agricultural Practices on Development of Antimicrobial Resistant Fungi Affecting Human Health

A Workshop

TUESDAY, JUNE 21, 2022 - Virtual (all times in EDT)

Bridging the Two Worlds: Fungal Pathogens in Plant and Human Health	
10:00 AM–10:10 AM	<p>Welcome Remarks, Workshop Overview, and Goals Paige Waterman, Uniformed Services University of Health Sciences <i>Workshop co-chair</i></p>
10:10 AM–11:05 AM	<p>Opening Panel Tom Chiller, U.S. Centers for Disease Control and Prevention <i>Moderator</i></p> <p>Antifungal drug uses in human medicine Arturo Casadevall, Johns Hopkins University Bloomberg School of Public Health</p> <p>Fungicide uses in plant agriculture Tony Dorn, U.S. Department of Agriculture</p> <p>Quadripartite Alliance joint activities on antimicrobial resistance (AMR) Tim Corrigan, World Health Organization</p>
11:05 AM–11:20 AM	Break
11:20 AM–12:35 PM	<p>Fungal Diseases, Antifungal Resistance, and Human Health Tom Chiller, U.S. Centers for Disease Control and Prevention <i>Moderator</i></p> <p>Impact of invasive fungal diseases and antifungal drug resistance on human health Andrej Spec, Washington University at St. Louis</p> <p>Overview of aspergillosis and mechanisms of antifungal drug resistance David Denning, Global Action For Fungal Infections</p> <p>Overview of drug-resistant, invasive <i>Candida</i> infections Brendan Jackson, U.S. Centers for Disease Control and Prevention</p>

	<p>Current research in understanding pathogenesis and host immunity toward developing treatment options Michail Lionakis, National Institute of Allergy and Infectious Diseases</p>
12:35 PM–1:15 PM	<p>Fungicide Resistance in Plant Protection Use Marin Talbot Brewer, University of Georgia <i>Moderator</i></p> <p>Genetics and mechanisms of fungicide resistance Matthew Fisher, Imperial College London</p> <p>Azole-resistant <i>Aspergillus fumigatus</i> in agronomic settings: hotspots and coldspots Kevin Doughty, CropLife International</p>
1:15 PM–1:55 PM	<p>Discussion</p>
1:55 PM–2:00 PM	<p>Summary and Adjourn</p>
<p>END OF DAY 1</p>	

WEDNESDAY, JUNE 22, 2022 - Virtual (all times in EDT)

Effects of Fungicide Use in Plants on Humans and the Environment	
10:00 AM–10:05 AM	<p>Welcome Remarks, Review of Day 1 Jeff Lejeune, Food and Agriculture Organization of the United Nations</p>
10:05 AM–10:45AM	<p>Role of Fungicide Use in Food Safety and Security Phil Taylor, Centre for Agriculture and Bioscience International (CABI) <i>Moderator</i></p> <p>Case examples to illustrate (1) the role of azole fungicides in safeguarding food safety and security, and (2) potential drivers of fungicide use in the US</p> <p>Tim Brenneman, University of Georgia Pierce Paul, The Ohio State University</p>
10:45 AM–12:15PM	<p>Dimensions of Fungicide Regulations, Use Management, and Risk Assessment Lynn Goldman, George Washington University Milken Institute School of Public Health <i>Moderator</i></p> <p>Documentation of azole fungicide use in plants in low- and middle-income countries Phil Taylor, Centre for Agriculture and Bioscience International (CABI)</p> <p>Registration and health threats assessment of fungicides Nathan Mellor, US Environmental Protection Agency Magdalini Sachana, Organisation for Economic Co-operation and Development</p> <p>Occupational exposure to environmental resistant fungi and possible implications in human health Raquel Sabino, Portuguese National Institute of Health Dr. Ricardo Jorge, Lisbon School of Medicine</p>
12:15 PM–12:30 PM	<p>Break</p>
12:30 PM–1:15 PM	<p>Innovations in Antimicrobial Resistance Surveillance Tools and Technologies Jeff Lejeune, Food and Agriculture Organization of the United Nations <i>Moderator</i></p> <p><i>Aspergillus fumigatus</i> azole resistance survey by air sampling through a citizen science approach Wieland Meyer, Curtin Medical School, Curtin University</p> <p>Innovation in data collection tools for surveillance and mitigation: crop and environment simulation tools Brian Bailey, University of California, Davis</p>

	Sampling strategies, interpretation of sampling outcomes, and evaluation of surveillance and management technologies Karen Garrett , University of Florida
1:15 PM–1:55 PM	Discussion
1:55 PM–2:00 PM	Summary and Adjourn
END OF DAY 2	

MONDAY, JUNE 27, 2022 - National Academy of Sciences (2101 Constitution Ave NW, Washington, DC 20037)

Mitigation Strategies for Fungicide/Antifungal Resistance	
8:00 AM–10:00 AM	In-Person Networking and Breakfast
10:00 AM–10:15 AM	<p>Welcome virtual attendees; Review of workshop thus far</p> <p>Paige Waterman, Uniformed Services University of Health Sciences <i>workshop co-chair</i></p>
10:15 AM–11:45 AM	<p>One Health Approach to Antimicrobial Resistance (AMR) and Pathogen Surveillance</p> <p>Maryn McKenna, Wired <i>Moderator</i></p> <p>The necessity and benefits of taking a One Health approach in AMR surveillance and mitigation measures</p> <p>Paul Verweij, Radboud University Bas Zwaan, Wageningen University</p> <p>Genomic surveillance and epidemiology</p> <p>Marin Talbot Brewer, University of Georgia</p> <p>Diagnostics, resistance testing, and surveillance capabilities in local and national levels: health care systems</p> <p>Shawn Lockhart, U.S. Centers for Disease Control and Prevention</p> <p>One Health approach to AMR and pathogen surveillance at the international level</p> <p>Jorge Pinto Ferreira, Food and Agriculture Organization of the United Nations</p>
11:45 AM–12:30 PM	<p>Antifungal Drug Development and Stewardship in Health Care</p> <p>Maryn McKenna, Wired <i>Moderator</i></p> <p>New antifungal drugs in development with different modes of action</p> <p>David Andes, University of Wisconsin</p> <p>Incentives and market for drug development and global access</p> <p>John Rex, F2G</p>
12:30 PM–1:00 PM	Break

1:00 PM–1:50 PM	<p>Integrated Disease Management</p> <p>Tim Widmer, U.S. Department of Agriculture <i>Moderator</i></p> <p>Precision application technologies and communication with growers and other stakeholders</p> <p>Melanie Ivey, The Ohio State University</p> <p>Current research toward targeted approaches and considering localized risk factors</p> <p>Walt Mahaffee, U.S. Department of Agriculture</p> <p>Mitigation measures in compost “hot spots”</p> <p>Jianhua Zhang, National Institute for Public Health and the Environment</p>
1:50 PM–2:00 PM	Summary of Workshop
2:30 PM–4:30 PM	Poster and Networking Session
END OF WORKSHOP	