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Professional Profile

Dr. Doherty has more than 40 years of experience in environmental and human health evaluation of chemicals, with particular expertise in pesticide residue chemistry, exposure, toxicology, and risk assessment. His knowledge spans U.S. regulatory frameworks, including TSCA, FIFRA, and FFDCA, as well as international arenas with over 10 years of leadership experience with the FAO/WHO Joint Meeting on Pesticide Residues and with OECD's Residue Chemistry Expert Group. Dr. Doherty provides consulting services in areas of human health risk assessment, environmental fate, ecotoxicology, and ecological risk assessment, with support provided for TSCA, foods, and veterinary medicine projects.

Prior to joining Exponent, Dr. Doherty enjoyed a 40-year career focused on pesticide science, first with USDA's Agricultural Research Service as an environmental fate specialist managing laboratory operations in support of pesticide environmental research and developing requisite analytical methods, followed by nearly 30 years as a residue chemist and human health risk assessor in the U.S. EPA Office of Pesticide Program's Health Effects Division, where he authored, reviewed, and advised on a myriad of exposure and risk assessments, often providing creative solutions to unique problems. As a senior chemist for most of his tenure at EPA, he was involved with a vast array of technical issues related to the registration and re-registration of pesticide active ingredients and end use products and has led various committees focused on residue chemistry, dietary exposure, and interpretation of metabolism studies, and was a long-standing member of the risk assessment review committee. He was instrumental in the development of US/Canada-harmonized residue chemistry Data Evaluation Record templates and their evolution into OECD Tier 2 summary templates, developing various Excel spreadsheets and tools for data analysis, and was a principal author of the import tolerance policy that promotes EPA use of residue chemistry reviews from outside authorities in making regulatory decisions. Additionally, Dr. Doherty was a temporary advisor to the FAO/WHO Joint Meeting on Pesticide Residues (JMPR) from 2014 to 2018 and elevated to a full FAO Panel member to the joint meeting from 2018 to 2025, chairing the group from 2018 to 2022. He was also the US Representative to the OECD Residue Chemistry Expert Group for the past 10 years and in that capacity worked with international teams to update the OECD residue chemistry test guidelines/guidance documents for supervised residue trials, rotational crops, analytical methods, storage stability, residues in honey, and pesticide residue definitions (co-lead). As a result of his international experience, Dr. Doherty has also served as an advisor to other US government entities on numerous regulatory harmonization issues. In his various roles, he demonstrated his ability to foster consensus, even on challenging topics, among experts from various regulatory fields and regions.

Academic Credentials & Professional Honors

Ph.D., Marine-Estuarine Environmental Science, University of Maryland, 1997

M.S., Marine-Estuarine Environmental Science, University of Maryland, 1990

B.S., Zoology, University of Maryland, College Park, 1988

Prior Experience

Senior Chemist, EPA-OPP, 2006-2025

Residue Chemist, EPA-OPP, 1998-2006

Chemist, USDA-ARS, 1985-1998

Professional Affiliations

American Chemical Society, 2018-present

American Chemical Society, Agrochemicals Division, 2018-present

Publications

Humphrey P, Margerison S, van der Velde-Loerts T, Doherty MA, Rowland J. 2017. Principles of safety assessment of pesticides at national level. In: Food Safety Assessment of Pesticide Residues. Ambrus A. (ed). doi:10.1142/q0050.

Shelton DR, Doherty MA. A model describing pesticide bioavailability and biodegradation in soil. Soil Sci. Soc. Am. J. 1997; 61:1078-1084.

Shelton DR, Doherty MA. Estimating losses of efficacy due to pesticide biodegradation in soil: model simulations. Soil Sci. Soc. Am. J. 1997; 61:1085-1090.

Mojasevic M, Helling CS, Gish TJ, Doherty MA. Persistence of seven pesticides as influenced by soil moisture. J. Environ. Sci. Health Part B 1996; B31:469-476.

Helling CS, Doherty MA. Improved method for the analysis of imazapyr in soil. Pest. Sci. 1995; 45:21-26.

Helling CS, Engelke BF, Doherty MA. DDT dissipation in Hawaiian in-situ soil columns. J. Environ. Sci. Health Part B 1992; B29(1):103-119.

Gupta GC, Doherty MA. Effects of age and number of flocks on poultry liter BOD and toxicity. J. Water Air Soil Pollut 1990; 52:139-145.

Presentations

Doherty MA, Murnane D. OECD residue definition guidance: the final stage. Oral presentation, 22nd International Akademie Fresenius Conference on Food Safety and Dietary Risk Assessment, Dusseldorf, Germany, 2024.

Doherty MA. MRL harmonization. Oral presentation (virtual), North American Trilateral Technical Working Group on Pesticides, Ottawa, Canada, 2023.

Doherty MA, Thomas M, Dutra-Caldas E. Workshop on FAO JMPR residue evaluation and risk assessment. Oral presentation, Santiago, Chile, 2020.

Doherty MA, Davis D. Import pesticide tolerance pilot project. Oral presentation, American Chemical Society National Meeting, Boston, MA, 2018.

Doherty MA. Same data, different outcome? A comparison of pesticide residue evaluations by EPA and JMPR. Oral presentation, American Chemical Society National Meeting, Washington, DC, 2017.

Doherty MA, Dawson J. Understanding the risk assessment basis for pesticides in the U.S. Oral presentation, Human Health and Ecological Risk Assessment Training, Brasilia, Brazil, 2016.

Doherty MA. JMPR and Codex MRLs: roles, responsibilities, and challenges. Oral presentation, American Chemical Society National Meeting, Boston, MA, 2015.

Doherty MA, Moase C. Priorities on human health evaluation. Oral presentation, NAFTA Technical Working Group, Mexico City, Mexico, 2000.

Project Experience

Chaired/co-chaired the FAO/WHO Joint Meeting on Pesticide Residues

Co-lead for OECD writing group of over 40 international experts in residue chemistry, toxicology, and exposure assessment tasked with updating the guidance document on pesticide residue definitions

Served on OECD writing groups for creating/updating guidance/guideline documents on supervised residue trials, rotational crop studies, storage stability, analytical methods, and pesticide residues in honey

Chair/co-chair OPP's Chemistry Science Advisory Council

Served on OPP's Risk Assessment Review Committee, Residues of Concern Committee, and Dietary Exposure Science Advisory Council