Contribution ID: **18** Type: **not specified**

Ayesha Siddique (ETOX): Integrating NAMs and Field Studies for ERA

Wednesday 7 May 2025 14:30 (15 minutes)

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Abstract: "Assessing pesticide effects across different biological levels remains a significant challenge, as field and laboratory studies are often conducted independently, leading to fragmented insights. Field studies, like those by Liess et al. (2021), have shown that pesticides can cause adverse effects even at lower concentrations, raising concerns that current Regulatory Acceptable Concentrations (RACs) may not offer adequate protection to non-target organisms. In contrast, laboratory and molecular-level studies typically observe effects at higher concentrations, which complicates the integration of field and laboratory data for risk assessments and creates difficulties in forming a unified risk assessment framework.
Siddique et al. (2024) made progress by linking pesticide effects across biological scales, from molecular to ecological levels, identifying consistent thresholds of impact. This helped bridge the gap between field and laboratory study results, offering a more cohesive understanding of pesticide risks. Building on this, we aim to advance pesticide risk assessment by combining field-based observations with New Approach Methodologies (NAMs) under PARC project. We are collecting field data to validate previous findings and assess the sufficiency of current RACs across EU. Simultaneously, molecular-level evidence is being collected to deepen mechanistic understanding. This integrative approach aims to establish a unified framework for pesticide risk assessment, ensuring that both ecological and molecular data contribute to a more comprehensive and protective evaluation of pesticide impacts across various biological scales."

Session Classification: Session IIIa: Environmental and Human Health, Chair: tbd