



Contribution ID: 252

Type: Poster

Uncovering the AMR Data Landscape across the Horticulture, Water, and Wine sectors in Australia

Monday 13 October 2025 19:10 (20 minutes)

Background: Antimicrobial resistance (AMR) is a growing concern in agribusiness sectors with serious consequences to productivity and public health. A data-centric approach is needed to support Australian agribusinesses and water sectors to understand the impact of antimicrobial usage on the emergence of resistance for diseases that farmers are faced on a daily basis. The SAAFE CRC Analytics Program has partnered with the Australian Research Data Commons (ARDC) and has undertaken a comprehensive study to assess the current AMR data landscape and needs in the Australian horticulture, water and wine sectors.

Methods: To map out the existing data generating processes, sources, data flow and its parameters, a structured interview instrument was developed and validated before deployment. Data types considered in the interviews included microorganism data, antimicrobial usage information and residues of antimicrobials, which were broadly categorised into three distinct categories: a) Compliance data, b) Operational data, and c) Research data. Furthermore, the interviews and workshops covered key challenges faced in managing and integrating the AMR data in these sectors. The interview instrument was deployed in 45-minute interviews of key domain experts from each sector (Horticulture N=4; Wine Sector N=2; Water Sector N=4). The information retrieved from interviews was then validated during 90-minute sector-specific workshops involving a broader group of key domain experts of each sector. The final data landscape information was summarised into directed acyclic graphs (DAG) depicting the interconnection of sector intervenient across all data types.

Results: The information that has been elicited during the interviews indicated that compliance data is tightly regulated, with a small set of parameters as part of the data flow between the data generator and regulatory authorities. Our results indicated that operational data collection is extensive, privacy-sensitive, and used for process monitoring and optimization. Research data is more ad-hoc and not always shared back with sector utilities. The data landscape DAG for each sector shows important data interactions between the horticulture, water and wine sectors that include the type of data, its flow, and the challenges and opportunities in these sectors.

Conclusion: This study will lay the foundation for digital adaptation in the aforementioned sectors. This process has resulted in invaluable insights and recommendations that will lay the foundation of future AMR data infrastructure in the Australian horticulture, water, and wine sectors.

Primary authors: Ms CHERRY, Green (The University of Queensland); AMIN, Noorul (The University of Queensland); Prof. SOARES MAGALHAES, Ricardo (The University of Queensland); Mr ARORA, Sahil (The University of Queensland); Dr PROBOSTE IBERTTI, Tatiana (The University of Queensland)

Presenter: AMIN, Noorul (The University of Queensland)

Session Classification: Poster Session

Track Classification: SciDataCon Persistent Themes: Data and Research