Antimicrobial Resistance And Genomic Insights Of Salmonella Isolates From Australian Bovine Samples (2021-2024)

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Background: Antimicrobial resistance (AMR) is one of the most serious risks to public health worldwide. Currently, routine surveillance testing for AMR in animal isolates is limited.
Aim: To examine AMR characteristics of *Salmonella* serotyped isolates obtained from beef and dairy cattle during routine diagnostic testing at a state veterinary laboratory in Australia (Elizabeth Macarthur Agricultural Institute [EMAI], NSW DPIRD), and to compare these results to antimicrobial sensitivity results for *Salmonella* isolates obtained in the same laboratory a decade earlier.
Methods: Minimum Inhibitory Concentration (MIC) testing on a total of 102 *Salmonella* isolates (77 dairy cattle, 25 beef cattle) was performed against 14 antibiotics with range of concentrations by using the high throughput robotics platform known as RASP (Robotic Antimicrobial Susceptibility Platform) at the Antimicrobial Resistance and Infectious Diseases (AMRID) laboratory at Murdoch University, WA.
Results: Overall, no multidrug resistant (MDR) isolates were found, and no trend towards increasing antimicrobial resistance in any drug class in the *Salmonella* isolates was observed.
Conclusion: The favourable sensitive profile of Australian *Salmonella* isolates reported in this study reflects a history of cautious antimicrobial use in animals in Australia. Ongoing surveillance of AMR in bacteria important in veterinary and public health is required and should form an important part of Australia's One Health strategy.