

Preliminary study of multidrug-resistant *Salmonella typhimurium* and its monophasic variant *Salmonella* I 4,12: i :- Isolated from animals in Malaysia

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ABSTRACT

Introduction: *Salmonella typhimurium* is an important animal-associated serovar reported to have zoonotic potential to cause human infections. Global infection cause by the monophasic variant *Salmonella* I 4,12: i :- has been increasingly reported among humans and animals since the 1990s. This monophasic variant was first identified from animal samples at the Veterinary Research Institute (VRI) Malaysia in 2020. **Objective:** This study used an archived collection of 18 strains, *Salmonella typhimurium* (n=10) and *Salmonella* I 4,12: i :- (n=8) isolated from animals in VRI since 2020 to investigate the antimicrobial resistance. **Materials and Method:** The disc diffusion method was used to assess antimicrobial susceptibility in all 18 isolates. A total of 11 antibiotics were selected based on the monitoring of animal farms according to the Malaysia Action Plan on Antimicrobial Resistance (2022-2026). **Results:** In this study, *Salmonella typhimurium* and *Salmonella* I 4,12: i :- revealed a high level of multidrug resistance, with resistance to three or more antibiotic classes at 90.0% (9/10) and 87.5% (7/8), respectively. Based on the results, it is notable that a monophasic strain isolated from chickens was found to be resistant to the third-generation cephalosporin group of antibiotics, which includes ceftiofur and cefotaxime. On the other hand, all ten *Salmonella typhimurium* strains were susceptible to ceftiofur and cefotaxime. **Conclusion:** The *Salmonella typhimurium* and its monophasic variant isolated from livestock animals in Malaysia were found to be multidrug-resistant.