

Transmission dynamics of antimicrobial-resistant *Salmonella enterica*, *Escherichia coli* and *Enterococcus* spp. in broiler poultry production farms in Uganda



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Introduction

Antimicrobial resistance (AMR) is one of 10 global health threats. It occurs when bacteria change and can fight off the antibiotic medicines that typically kill them. As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat. In Uganda AMR has been reported in the human and animal health posing a great danger to the country health systems. Misuse of antibiotics in livestock sector especially poultry has been pointed out as a major driver. We therefore set to conduct this study to; to quantify antimicrobial use on farms, quantify resistance on farms, understand reasons for persistence of resistance on farms and transmission dynamics of AMR on a farm environment.

METHODS: This study has two two phases, starting with cross sectional survey conducted on 200 farms in Wakiso and 200 farms in Soroti between June 2021 and March 2022. The cross-sectional survey involved KAP studies on AMR (Data analysis is ongoing), determination of prevalence of AMR by culture and sensitivity (Data analysis is ongoing).

The second phase of the study is the longitudinal phase which will commence from January 2023 in which 20 farms will be included to quantify AMUSE, quantify AMR, determine persistence of strains and transmission of resistant strains on the selected farms.

RESULTS : summary of lab results so far

	Samples collected		
	Wakiso	Soroti	
Boot sock sample	200	200	400
Composite samples	200	200	400
	CULTURE RESULTS		
Colistin resistant strains isolate (from composite sample)	98	96	194
Cefotaxime resistant strains (From composite samples)	110	109	219
<i>E.coli</i>	175	176	351
<i>Enterococcus</i>	173	178	351
<i>Salmonella</i>	25	55	80

High prevalence of multi drug resistant *Escherichia coli* has been observed in both Wakiso and Soroti. Even though farms in Soroti reported little to know AMU in poultry, high resistances are still being observed to commonly used antibiotics.

Contribution towards Uganda livestock development: This AMR study is contributing towards proper understanding of the magnitude of the AMR problem in Uganda. This will result in into well identified interventions and properly designed mitigations that can be implemented by NADDEC and national AMR task force.

LIMITATIONS AND CHALLENGES

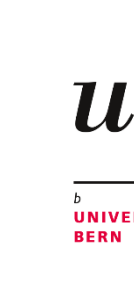
- Delays in procurement and logistics to acquire necessary supplies for use in Laboratory
- Delays in government clearances for movement of samples for AST and MALD-TOF work in Nairobi
- Delays in receiving necessary clearances and research permits

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