

## Potential Threats from Antibiotic Resistant Strains of Non-Typhoidal *Salmonella* from Chicken Farms in Uganda

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**Background:** Non-typhoidal *Salmonella* (NTS) is a global food-borne pathogen that has been associated with many recent food-borne disease outbreaks, illnesses and an important public health challenge. It's mainly contaminated poultry meat, eggs, dairy products and sometimes vegetables which are the main sources of NTS. It is estimated that in Africa NTS actually causes more mortality than typhoid fever. In addition, there is a global threat of increasing development of resistance of NTS against commonly used antibiotics. This is especially important for critically important antibiotics used for treating humans. A better understanding of NTS with a focus on primary production units will enhance effective control strategies. The aim of this study was to determine antibiotic resistance in NTS isolates from chicken farms.

**Methods:** A cross-sectional study was carried out between August 2015 and June 2016 in a randomly selected laying chicken farms in the districts of Masaka, Wakiso and Lira. Faecal samples were collected from poultry houses cultured, and NTS isolated and identified. Disk diffusion method was used to test for phenotypic resistance against 13 antibiotics.

**Results:** Out of the 78 isolates, 45 (57.7%) were resistant to at least one of the 13 antibiotics. Resistance was significantly associated with district ( $p=0.034$ ) with more resistant isolates from Wakiso. Multidrug resistance was seen in 12 isolates. The highest resistance was seen in ciprofloxacin, 51.3% of the isolates. This was followed by sulfamethoxazole (28.2%), trimethoprim (7.7%), trimethoprim/sulfamethazole (7.7%).

**Conclusions:** High level of resistance to commonly used human drugs in Uganda is observed. This is a potential public health disaster as resistance genes can be transferred to other pathogens. Efforts should be put in place to combat antibiotic resistance in zoonotic pathogens from primary production points.