Microbial contamination at slaughter and retail points of the pork value chain in selected districts of Uganda

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Introduction

Bacterial foodborne pathogens remain a global public health concern with a huge health burden. Pigs and pork have been implicated in transmission of non-typhoidal *Salmonella* (NTS) through pork to humans. Uganda ranks top in consumption of pork in East Africa yet the safety of pork and the risks of NTS infection to pork handlers remains uninvestigated.

This study aims to establish levels of contamination and presence of NTS at the point of slaughter and retail of the pork value chain and factors that influence those levels. It will also establish genetic relatedness of NTS from pigs, humans and the slaughter and retail environments.

Methods

This is a cross-sectional study in Lira, Mbale, Soroti and Kampala districts. Sample and data collection is in the final stages. Pigs presented for slaughter are sampled and carcasses tracked to the point of retail and sampled. Samples from slaughter and retail environments are also collected.

Samples are cultured for NTS, and levels of bacteria determined by total coliform counts. Meat handlers at the point of slaughter and retail are investigated for NTS. Demographic data and risk factors for NTS infection in humans is captured using questionnaires. An observational tool is used to collect data on factors at slaughter and retail that influence occurrence of contamination.

Findings

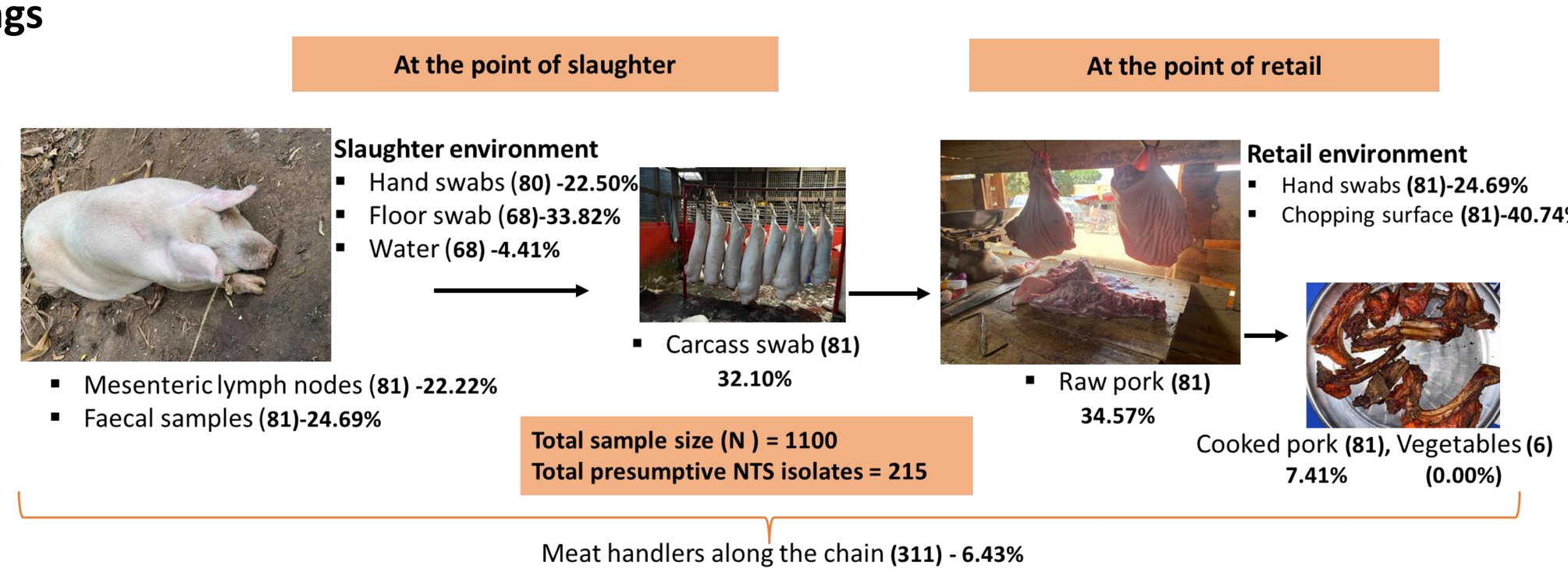

Fig 1: Presumptive Non-typhoidal *Salmonella* from Lira , Mbale and Soroti

Conclusion and Limitations

There is significant levels of contamination with coliforms and presence of NTS both at slaughter and retail. This can be attributed to poor hygiene and poor pork handling practices which contribute to the build up and propagation of contamination. Isolation of NTS from up to 24% of pig mesenteric lymph nodes and coecal content reveals on-farm NTS infection, which is the primary source of introduction of NTS into the chain. The main limitation is that the study could not investigate all the points along the chain where there is possible introduction and propagation of contamination.

Contribution to Uganda's livestock development agenda

This research contributes to BUILD's vision of improving meat safety and occupational health for meat handlers through generation of representative baseline data. This will inform strategies and mitigation measures to reduce occurrence and build-up of bacterial contamination at the point of slaughter which eventually spills over to the consumers. The data can also be used to monitor impact of strategies and mitigation measures.

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