

The Prevalence of Foodborne Pathogens in Retail Delicatessens from South Africa

Nicole Meyer¹, Maricel Krügel², Pieter Gouws¹

¹Centre for Food Safety, Stellenbosch University, Stellenbosch University, South Africa. ²Stellenbosch University, Stellenbosch University, South Africa

Abstract

Ready-to-eat (RTE) food products from delicatessens have a risk of cross-contamination when they come into contact with a contaminated raw food or food contact surface. These products do not undergo a terminal heating step prior to consumption so any post-process contamination poses an important food safety concern. There is limited research available on the incidence of foodborne pathogens found within the RTE food processing facilities in South Africa.

The purpose of this study was to determine the prevalence of foodborne pathogens in delicatessens of a popular retail chain in South Africa.

A total of 80 environmental swabs were collected from four delicatessens across the Western Cape, South Africa. Swabs (4 cm²) were taken from different points within each facility, including hand contact points, scullery areas, meat slicers, food cooking areas and drains. Each swab collected was tested for *Listeria monocytogenes* (ISO 11290-1/A1:2005), *Salmonella* species (ISO 6579:-1:2017) and *Escherichia coli* (ISO 16649-2:2001). Results confirmed with VITEK®2 Compact Automated System.

L. monocytogenes was detected in more than 90% of the drain samples, 75% of the scullery areas and 50% of the food preparation areas throughout the sampling period. No *Salmonella* spp. were detected. *E. coli* results, as an indicator organism, indicated the drain swabs averaged from log 4.95 to 5.88 cfu/cm², the meat slicer swabs averaged from log 4.43 to 5.88 cfu/cm² and the display handle swabs averaged from log 5.26 to 5.64 cfu/cm².

These results emphasise the importance of having a food safety system in place, ensuring that training, such as good hygiene practices and sufficient cleaning practices, are conducted and that the standards are upheld. Findings of this study contributes to the knowledge and importance of having a food safety plan being correctly implemented and upheld within RTE delicatessen food processing facilities in South Africa. The results give insight into the importance of functioning food safety systems in any food processing facility. With the increase in consumption of RTE food products, an awareness campaign should be implemented.