



2002-01-01

# An Investigation of the Safety of High Risk Sandwich Bar Foods Through the Application of Microbial Analysis, Temperature Monitoring and Microbial Predictive Modelling

Marie-Clare Maher (Thesis)  
*Technological University Dublin*

Follow this and additional works at: <https://arrow.dit.ie/tourmas>

 Part of the [Food Biotechnology Commons](#), and the [Medicine and Health Sciences Commons](#)

## Recommended Citation

Maher, M.: An Investigation of the Safety of High Risk Sandwich Bar Foods Through the Application of Microbial Analysis, Temperature Monitoring and Microbial Predictive Modelling. Masters Thesis. Dublin Institute of Technology, 2002.

This Theses, Masters is brought to you for free and open access by the Tourism and Food at ARROW@TU Dublin. It has been accepted for inclusion in Masters by an authorized administrator of ARROW@TU Dublin. For more information, please contact [yvonne.desmond@dit.ie](mailto:yvonne.desmond@dit.ie), [arrow.admin@dit.ie](mailto:arrow.admin@dit.ie), [brian.widdis@dit.ie](mailto:brian.widdis@dit.ie).



This work is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 3.0 License](#)



Rising incidents of food poisoning may be related to growing evidence of unsatisfactory temperature and hygiene practices in preparing and storing ready-to-eat foods. Four sandwich bar outlets in Dublin city center were observed regarding the quality of food handling and storage practices of chilled vacuum packed cooked chicken breast. A pilot microbial sampling plan proved *Staphylococcus aureus* was the major microorganism of concern. Microbial counts revealed a *S. aureus* count of ) cfu/g on chicken straight from the vacuum pack and a count of 10(3)-10(4) cfu/g after handling/preparation (cutting, slicing and blending) had occurred. This compared poorly to the upper satisfactory limit of 10(2)-10(4) cfu/g. a full temperature history of the chill-display units showed fluctuations between 6-12°C, when the recommended temperature is -1 to +5°C. The potential of microbial predictive modelling was also investigated to asses the outlets degree of safety in the operating systems. Pathogen growth data were compared with predictions from the Food MicroModel (FMM) and differences between observed and predicted counts were not significant at 5% level. The existing HACCP plans in surveyed outlets failed to highlight critical limits, particularly with respect to temperature.