

SURVEY OF ENVIRONMENTAL MICROFLORA IN MEAT PROCESSING PLANTS



DO BACTERIA DEVELOP RESISTANCE TO SANITIZERS ?

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MSI Programme: NZ beef and lamb: Value from quality



INTRODUCTION

- ❖ Different environments within the plant will select for different microflora
 - e.g. boning room versus slaughter areas
 - ❖ Bacteria from the hides and faeces of animals will be introduced into the slaughter area environment but these may not present in the boning room
 - ❖ Temperature and availability of organic material
- ❖ Sanitizers are used routinely to remove food borne pathogens and spoilage organisms; and their continual use is likely to result in development and selection for resistance in the microbial population
- ❖ **Does this pose any food quality or safety risk?**

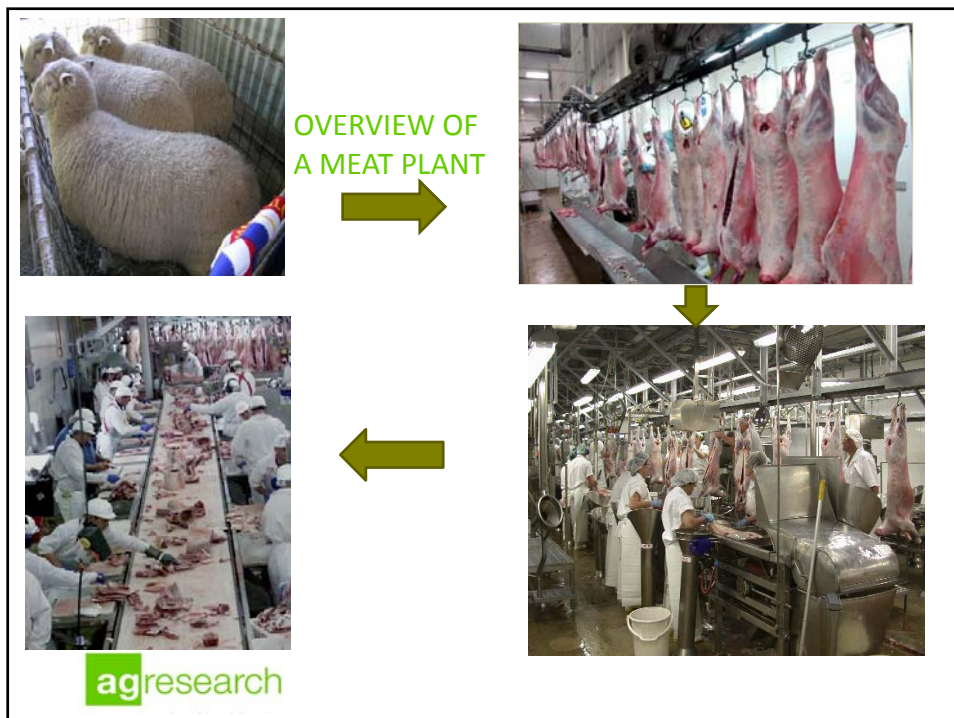


PROJECT AIMS

- ❖ Longitudinal and cross-sectional survey of the microflora present in a typical meat plant in New Zealand

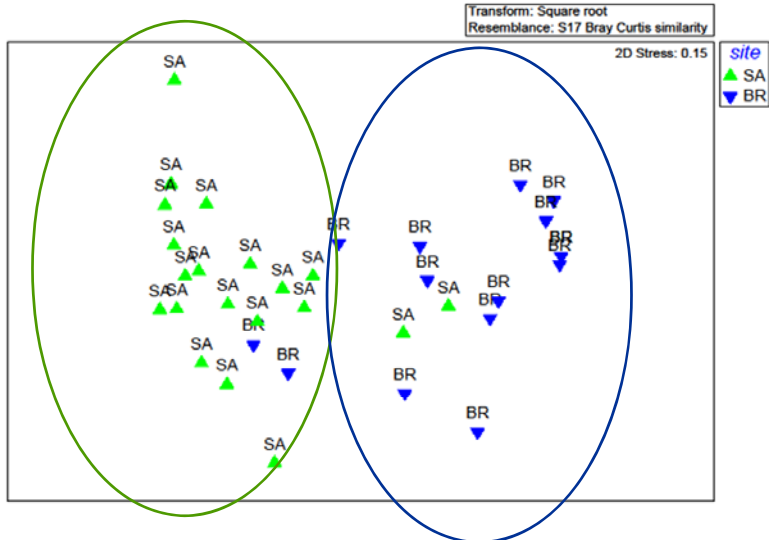
- ❖ Variation
 - » spatially
 - » temporally
 - » type of animal

- ❖ risk that development of resistance in these organisms poses





SLAUGHTER AREA VS BONING ROOM



Two distinct populations are present

WHAT DO WE KNOW SO FAR?

- Sanitizer resistant bacteria have been isolated from meat plants in the North Island.
- Bacterial community structure of slaughter area differs significantly from the boning room



SUMMARY

- Knowledge about microbial community composition in food processing plants is crucial
- Continual use of sanitizers leads to the development of tolerance or resistance in these communities

Consequence of this will be :

- Decrease the efficacy of sanitizers
- Increase food safety and spoilage risk



APPLICATION TO THE INDUSTRY

- Efficacy of the cleaning regime currently in use
- Determine the effect of rotation or change in sanitizers on the development of resistance