

MICROBIAL SAFETY OF POWDERED BURRITO, TUNA TRIMMINGS, TUNA GILLS AND TUNA BONES



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INTRODUCTION

Low economic value fish such as burrito (*Brachydeuterus auritus*) and fish by-products such as tuna trimmings, gills and bones or frames (Fig. 2) can be incorporated in the form of a powder into local carbohydrate diets. This will ensure food security, augment the gradual decline of fish production in Ghana and enhance the nutritive value of carbohydrate diets. This can only be achieved if the fish and fish by products are microbiologically safe among other safety requirements and this is the objective of this project.

MATERIALS AND METHODS

The microbial safety of the powdered burrito and the fish by-products were determined by assaying for various indicator and pathogenic microorganisms using ISO and NMKL methods. These microorganisms included aerobic mesophiles, yeast and moulds, coliform bacteria, *E. coli*, *Enterococcus*, *Enterobacteriaceae*, *Staphylococcus aureus*, *Bacillus cereus*, *Cl. Perfringens*, *Vibrio* and *Salmonella*.

RESULTS AND DISCUSSION

The population of aerobic mesophiles ranged between 10^5 - 10^6 CFU/g for the fish by-products powder whilst the burrito fish powder were at 10^3 CFU/g. The population of yeast and moulds were lower at 10^2 CFU/g and below. Coliform bacteria of a population of 10^2 CFU/g were recorded from the burrito fish powder. The pathogens *E. coli*, *Enterococcus*, *Enterobacteriaceae*, *Staphylococcus aureus*, *Bacillus cereus*, *Cl. Perfringens*, *Vibrio*, and *Salmonella* were not detected in any of the powdered samples (Fig 1).

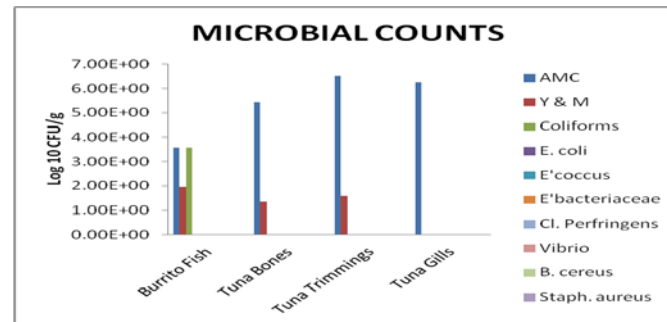


Figure 1: Microbial counts on the fish and fish by products



Figure 2: Burrrito (*Brachydeuterus auritus*), tuna trimmings, gills and bones (frames)



Figure 3: Powders of Burrrito (*Brachydeuterus auritus*), tuna trimmings, gills and bones (frames)

CONCLUSION

The powdered samples according to the standards set by Ghana Standard Authority (GS 955, 2013) were acceptable. The fish and fish by-products powders (Fig 3) were therefore microbiologically safe for inclusion in human diets and this will improve food security in Ghana.

REFERENCE

GS 955 (2013), *Microbiological analysis of foods – Sampling Plans and Microbiological Criteria*, Ghana Standards Authority, Ghana.

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