Size Reduction of Red Pepper and Industrial Safety Management in some Accra Markets

Abstract

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INTRODUCTION
Size reduction is an important unit operation in Ghanaian food processing. Root crops, cereals, and vegetables are popular foods and undergo milling.

Generally, the mills are privately owned and operated mostly in public places such as the food markets. Most millers would not discriminate among commodities provided their machine can withstand the pressure put on it. As a result cross contamination and adulteration may also occur because cleaning procedures in-between products are inadequate which may affect food quality attributes like color, flavor, and functionality leading to food poisoning.

Heavy metals and the connection of the machine to electricity is another challenge.

Red pepper was found contaminated with microbial load, heavy metal and adulterated by previous commodities.

MATERIALS AND METHODS
The food safety and hygienic status after size reduction of red pepper were determined. The research was conducted in different markets: Agbogbloshie, Kaneshie, Kantamanto, Makola and Nima.

Samples were taken before and after milling(36 samples in total) to assess the microbiological safety of foods and the microbial total load by plate count agar (PCA), and Violet Red Bile Glucose (VRBG) for the detection and enumeration of Enterobacteriaceae such as Escherichia coli indicating the presence of potential faecal contamination.

The determination of heavy metals was done on various samples using the atomic absorption spectrophotometer AAS Elmer 400.

RESULTS AND DISCUSSIONS.

The food safety and hygienic status after size reduction of red pepper were determined. The research was conducted in different markets: Agbogbloshie, Kaneshie, Kantamanto, Makola and Nima.
Samples were taken randomly before and after milling (36 in total) to assess the microbial total load and the detection of Enterobacteriaceae. All 36 samples were contaminated, some even adulterated. The environment was found inadequate for production.

CONCLUSION
The results suggest that it is necessary to put in place not only capacity building for machines operators in Accra markets but also good manufacturing practice (GMP) in Accra milling industry starting with HACCP (Hazard Analysis Critical Control Points) principles. If not consumption of such products could lead to serious health hazards.

The presence of heavy metals and the state of the environment constitute another threat to red pepper consumers.

Key words: Red pepper, Size reduction, food safety, HACCP, GMP.