

ABSTRACT

Bacteriological Aspects of a Hatchery and a Meat Processing Plant in Jamaica.

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In this thesis, the sanitation and bacteriological aspects of a hatchery and a meat processing plant were examined. The levels of bacterial contamination throughout the hatchery were determined. The microflora of each room of the hatchery and the effect of washing on them was examined by identification of 370 bacterial isolates before and after washing. The effectiveness of the quaternary ammonium sanitizer and other cleaning agents used for washing was examined. The microbiological quality of the hatchery's water supply was also investigated. The results indicate that washing and sanitizing did not affect the gram-negative bacteria although gram-positive bacteria were killed. Pseudomonas, Plesiomonas and Enterobacter therefore dominated the post-washing flora. The water supply of the hatchery was also found to be contaminated. It is postulated that the high numbers of these bacteria

may reduce the efficiency of the hatchery by causing high chick mortality and infertility due to bacterial contamination.

Bacteriological conditions of a frankfurter processing operation in one of the meat processing plants were investigated. The sanitary state of the equipment, packages and workers' hands in the processing plant was examined. Bacterial levels of the meat at various stages of processing and the bacterial population in its environments were determined by identification of 350 bacterial isolates. The effect of processing on the bacterial count in frankfurters and the heat resistance of surviving bacteria after cooking were examined. The antibiotic resistance and plasmid content of some of the isolates were examined. The cooking/smoking operation of frankfurter production was shown to be ineffective because of poor process control. Sanitation at the plant was poor, resulting in an unsafe product which was contaminated with staphylococci and thermophilic, antibiotic-resistant enterococci. It is highly recommended that regular bacteriological checks on the sanitation programme and the finished product should be undertaken to ensure a safe and high quality product.