

Food Hygiene and Control

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Editorial

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Editorial

The tourism was considered one of the most important sectors either socially or economically, this means that they consume meals prepared in hotels and restaurants. Access to safe, nutritious and good quality food is considered a basic right of people. Food safety in hotels and restaurants is very critical point, because the available facilities in hotels in many places do not meet the required hygienic standards. Therefore, the number of guests who come annually may be affected if they suffer from food poisoning due to consumption of contaminated food. Therefore, there is an urgent need to implement an international system as a tool for assuring food safety in this sector.

Globally, food safety problems in most food serving establishments (hotels and restaurants) arise from bad holding; inadequate cooking or reheating, unsafe sources, cross contamination from infected persons and contaminated equipments, utensils and cutting boards, raw food, especially meat, poultry and their juices, and addition of toxic chemicals. Recontamination of cooked meat by food borne pathogens, as *Staphylococci*, may arise from hands and clothes of workers or from equipment's and utensils.

The failure of food manufacture to assure the production and distribution of safe food products leads to many serious food borne diseases which cause considerable morbidity and mortality, as well as reduction in economic productivity.

Food safety has become top priority for regulatory agencies all over the world. Traditional quality control procedures, which rely on end line inspection of product hygiene, are not effective in identifying causes of hygiene failure. A relative new approach for the

prevention and control of the probable health hazards is "HACCP" system.

HACCP "Hazard Analysis and Critical Control Point" is a prevention based food safety system. It involves the systemic identification and assessment of physical, chemical and biological hazards, and the preventive measures for their control to ensure food safety. It focuses on prevention rather than examination of the end-product. Moreover, it can be effectively applied throughout the food chain from producer to consumer.

There is a strong positive effect of mandatory HACCP implementation on process hygiene indicators in meat establishments. Significant reductions were observed in the number of hygiene indicator organisms on all types of surfaces examined and types of meat establishments investigated.

The 7 HACCP principles are (a) Conduct a hazard analysis. (b) Determine critical control points. (c) Establish critical limits. (d) Establish monitoring procedures. (e) Identify corrective actions. (f) Verify that the system works, (g) Establishing of keeping records and documentation.

Presence of *Staphylococcus aureus* in a food indicates its contamination from food handlers and inadequately cleaned equipment.

The industry, consumers and government have a joint responsibility to bring about greater knowledge and better hygiene practices.

The inadequately cleaned cutting equipment act as a major source of *E. coli* contamination during boning. The faulty in meat handling, poor personnel hygiene,

inadequate cleaning methods and lack of facilities for the segregation of raw and cooked meat resulted in a significant increase in the occurrence of food borne illness.

The slaughtering processing, such as bleeding, dressing and evisceration, expose the sterile muscle to microbial contaminants that were present on the skin, in the digestive tract and in the environment.

The increases in bacterial numbers following boning are due to cross contamination from surfaces and equipment within the boning hall and from handlers. Particular concern is the cross contamination of meat cuts with faecal organisms such as occurred at the inside round site. Log values for total coliforms and Enterobacteriaceae at this site increased by approximately two orders of magnitude, while the log value for *E.coli* increased by approximately three orders of magnitude.

Catering for large functions presents many potential problems associated with the advanced preparation and storage of large quantities of food which then must be safely transported, displayed and served in venues that are often not designed for the purpose.

The faecal matter was a major source of contamination and could reach carcasses through direct deposition, as well as by indirect contact through contaminated and clean carcasses, equipment, workers, installations and air.

Staphylococcus aureus is indeed found in the nostrils, and on the skin and hair of warm-blooded animals. The main sources of contamination are human handlers (contaminate food via manual contact or via the respiratory tract by coughing and sneezing) and post contamination occurs after heat treatment of food. Nevertheless, in foods such as raw meat and sausage, contaminations from animal origin are more frequent. *E. coli* O157:H7 and other strains are not naturally present in carcasses, but they can be present as result of the direct

cross-contamination during the slaughter process.

The frequency of potential pathogens in the surrounding environment and surfaces of retail shops was also examined. High viable counts and the presence of potential pathogens on meat-processing equipment, as well as on the walls and floors of retail shops, represent their environmental hygiene status. However, it is interesting to note that consumer platforms or counters of the shops were cleaner than the floors and walls, which might be due to mopping of this area several times in a day. The presence of bacterial pathogens in meat-processing equipment and associated surfaces may contribute to the contamination of meat. Previously, it has been demonstrated that mincing meat with dirty equipment significantly increases the level of contamination in minced meats as compared to that in whole carcasses; furthermore, the process of mincing has the potential to introduce pathogens such as *Listeria monocytogenes*. On the other hand, food-borne pathogens which are able to disseminate from contaminated meat to such surfaces can spread infections in the community.

The gross unhygienic condition of food offered to the consumers. Pathogens such as *Salmonella* spp., *Shigella* spp. and *Escherichia coli* were the main identified organisms in the catering establishments. It is concluded that the sanitary conditions of studied subjects required strict follow up for the provisions of sanitary codes.

Improper food handling and preparation measures were identified and addressed by the appropriate authorities, who provided additional detailed education on food preparation safety for the persons who prepared the meal.

Most of the meat and fish products that are sold are commonly contaminated with pathogenic microorganisms. Potential sources of microbial contaminations are the equipment used for each operation that is performed until the final product is eaten, the clothing and hands of personnel and the physical facilities themselves are all implicated.

