

Lecture 3- Management of food safety hazards

Need for managing food safety hazards

Food safety hazards cause food borne illness to an individual that would affect their overall health, work and personal lives.

1. Loss of family income
2. Increased insurance
3. Medical expenses
4. Cost of special dietary needs
5. Loss of productivity, leisure and travel opportunities

Managing hazards

Hazard identification

In any food safety system, all reasonably foreseeable hazards are identified along each stage / process.

Hazard analysis

Each hazard is then analysed along the source, what can go wrong, how, when etc. and understanding the conditions that may cause the hazard to be present or to increase.

Hazard characterization

The qualitative and/or quantitative evaluation of the nature of the adverse health effects.

Risk characterization

The qualitative and/or quantitative estimation of the probability of occurrence and severity of adverse health effects.

Control measures

Necessary actions are identified and implemented to reduce or eliminate the hazard

General Control Points for Biological Hazards

Product Specification

It is important to be aware of the presence and number of microorganisms in food. Many raw materials, therefore, have microbiological standards. It is common in the food industry to have specifications for the absence of microbiological contaminants.

Control Mechanisms

Physical and chemical control mechanisms significantly affect the survival and multiplication of microorganisms; for example, a reduction in pH in fruit juice by the addition of ascorbic acid can prevent microorganisms from multiplying. Time and temperature are important control points since cooking or freezing rapidly can prevent the growth of biological contaminants. Freezing usually stops the multiplication of microorganisms; however it does not kill them. Thermal processing will kill most biological hazards.

Management of Cross-Contamination

Cross-contamination must be managed so that materials cannot contaminate others. Control systems should be in place and your staff made aware of their responsibility to prevent contamination. Your staff must also be aware of correct product handling and personal hygiene.

Cleaning and Disinfection

The equipment used for producing, processing, and storing products should be sanitized on a regular basis. It is good practice to have a cleaning schedule in place. The packing, storage, and distribution must be controlled so that no biological hazard can contaminate or survive on food products. This process will entail suitable packaging for the product and temperature control in storage and distribution.

Conditions for Use

The directions you provide to the consumer are very important. Providing information on how to correctly store and cook the product can reduce the risks of biological hazards.

Controls of Chemical Hazards

Having a management system in place that identifies sampling points and sampling levels is good practice to reduce the risk of chemical hazards. The table shows suggested areas of inspection.

Chemicals should always be kept separate from food supplies, preferably in a separate cabinet, and bottles should be clearly labeled as containing chemicals.

If cooking with copper pots, the interior should be lined with a nonporous metal, such as stainless steel.

In a commercial kitchen, up-to-date Material Safety Data Sheets should be easily accessible.

All containers, pots, and pans should be thoroughly washed and rinsed using cleaning solutions before beginning new food preparations.

Control of Physical Hazards

Preventive maintenance of equipment is extremely important to greatly reduce the risk of physical contamination. Equipment failure or breakage can allow physical hazards to enter foods. This happens usually during the processing stage. Routine inspections and maintenance of the equipment is good practice. Screens and filters used in liquid processing can identify problems in equipment upstream. By regularly inspecting the screens or filters, objects from equipment (broken machine parts or rubber seals, for example) can easily be seen and further contamination is reduced.