Summary

A general definition of a hazard as related to food safety is conditions or contaminants that can cause illness or injury. All hazards are assessed and categorized into three groups: biological, chemical and physical hazards.

Biological hazards include microorganisms such as bacteria, viruses, yeasts, molds and parasites. Some of these are pathogens or may produce toxins. A pathogenic microorganism causes disease and can vary in the degree of severity. Examples of biological hazards include Salmonella, E. coli and Clostridium botulinum.

Chemical hazards vary in the aspect of production they are related to. Some potential chemical hazards could be prior to a processor receiving product, such as the improper use of pesticides or antimicrobial residues. Others could be chemicals used on processing equipment such as oils used on equipment or sanitizers. Furthermore, other potential chemical hazards may include substances that are safe or used in processing at certain levels but can cause illness or injury if consumed at too high of a concentration, such as sodium nitrite or antimicrobial solutions used in intervention steps. The HACCP team will need to evaluate in the hazard analysis the likelihood of the chemical to cause illness or injury. Generally, an operation's Standard Operating Procedures will address the acceptable use of products which could become hazards if not properly handled and monitored.

Physical hazards include objects that are hard or sharp such as glass, metal, plastic, stones, pits, wood, or even bone. Physical hazards can lead to injuries such as choking, cuts, or broken teeth. Some foreign material in food products may not be a physical hazard but rather an undesirable foreign material such as hair, insects, or sand that are not likely to cause injuries.

HACCP is therefore a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.