FAQs

1. Define food safety hazards. Explain the important factors responsible for it.

A food safety hazard can be defined as any factor present in food that has the potential to cause harm to the consumer, either by causing illness or injury. Food safety hazards may be biological, such as pathogenic bacteria, chemical, such as a toxin produced during processing, or a physical object, like a stone or piece of metal. In other words, hazards are the factors that food safety practice seeks to protect against, contain and eliminate from foods.

2. Discuss biological hazards

Biological hazards may include larger organisms, such as insects and rodents. However, these rarely present a direct threat to health. It is microorganisms and certain food borne parasites that are of most concern as food safety hazards. Most food borne bacterial pathogens cause illness by multiplying in the gut after ingestion of contaminated food. They may then provoke symptoms by invading the cells lining the intestine, or in some cases, invading other parts of the body and causing more serious illnesses.

A significant number of bacterial species can be classified as biological food safety hazards. Examples are *Vibrio parahaemolyticus*, *Listeria monocytogenes*, *Yersinia enterocolitica*, *Campylobacter* sp. *Clostridium perfringens*, viruses, parasites, prions, fungi etc.,

3. Write a note on food intoxication

There are a few food borne pathogenic bacteria that produce illness not by infection, but by intoxication. These organisms are able to grow in certain foods under favorable conditions and produce toxins as a by-product of growth. The toxin is thus pre-formed in the food before ingestion and in some cases toxin may still be present even after all the bacterial cells have been destroyed by cooking. *Bacillus cereus* and *Staphylococcus aureus* are examples of bacteria which are able to cause intoxication, but the most important and potentially serious cause of intoxication is *Clostridium botulinum*. Intoxications usually have much shorter incubations times than infections, because the toxins are pre-formed in the food.

Fungal toxins such as Aflatoxin B_1, B_2, G_1 and G_2 are also contributing to food intoxication. Aflatoxin B1 and fumonisins are the most commonly found in food and also the most toxic.

4. Explain main classes of chemical contaminant in food

Some of the main classes of chemical contaminant important in food safety are as follows:

- Agricultural chemicals, pesticides, etc.;
- Veterinary drugs
- Natural biological toxins
- Fungal toxins
- Plant toxins
- Fish toxins
- Environmental contaminants (e.g. dioxins and heavy metals)
- Contaminants produced during processing (e.g. acryl amide)
- Contaminants from food-contact materials (e.g. plasticizers)
- Cleaning and sanitizing chemicals
- Adulterants (e.g. illegal food dyes).
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5. Name few food allergens

Cereals containing gluten (i.e. wheat, rye, barley, oats, spelt or their hybridized strains), crustaceans, fish, egg, peanuts, soya beans, milk, tree nuts, celery, mustard, sesame seeds and sulfur dioxide and sulfites are the examples of food allergens.

The control of allergens in food is now a rapidly developing aspect of food safety, which many manufacturers will need to be concerned with. Twelve specific major food allergens are currently recognized by EU legislation, although many more foods are likely to be capable of causing allergic reactions in sensitive individuals.