

Quick Methods used to Avoid Hazards in Food

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Abstract

A food contaminant of the consumer refers to any substance that is present in the food and can potentially cause harm to the consumers. The contaminated food of the consumer may be biological, chemical, or physical in nature. They can be naturally occurring in the food material or introduced during the food production, handling, or storage. The food business of the consumer is mandated to establish controls and monitoring procedures against the food contaminants. A food object of the consumer is referred to as contaminated if it comes in contact with an unwanted substance and could result in severe disease or injury to the consumer if it is consumed. The Contamination can occur through various means, including biological, chemical, or physical sources, and it is a significant concern for the food safety of the consumer and quality assurance in the industry.

Keywords: Food contaminants; hazards; biological; chemical; physical

Introduction

The contaminated food of the consumer is a severe public health issue in the world, leading to the foodborne diseases that affect human beings annually. The Contamination describes a situation of the presence of unwanted elements that is not appropriate for use. The contaminated food of the consumer usually happens when foreign particles such as the microorganisms, the chemicals, and the insects are present. Several incidents related to the contaminated food of the consumer, the food mislabeling, and the food safety have been recorded, which has attracted attentions (1,2,3,4,5,6 and 7). The development of reliable and efficient techniques of detection was challenging due to the complexity of the food matrices and trace levels of contaminants in the food of the consumer. The biosensor is an alternative with the excellent selectivity, the specificity, the sensitivity, the usability, the flexibility, the low cost, and the quick processing time. The toxicological elements, and the biosensor technology risk analysis (8,9,10,11,12,13 and 14). The Different applications of the biosensor technology for the identification of the chemical food contaminants of the consumer, including the pesticides, the heavy metals, the migratory substances from the packaging materials, the pollutants, and the unapproved and the dangerous food additives in the food (15,16,17,18,19,20 and 21).

types of the contaminated food of the consumer The three types of the contaminated foods are the

following:

The Biologically contaminated food, The Chemically contaminated food, The Physically contaminated food of the consumer

These types are the major categories of the contaminated food and do not include others, such as allergenic contaminated food and radiologically

contaminated food of the consumer. It depend up on the type of raw materials and products being produced, the most common food hazards of the consumer in a business may vary (22,23,24,25,26,27 and 28).

The Biologically contaminated food of the consumer One of the most common types of contaminated food, biologically contaminated food of the consumer, refers to the presence of harmful microorganisms such as bacteria, molds,

yeasts, viruses, and parasites. These harmful agents are collectively known as the food pathogens. It Depend up on the biological hazards in the food of the consumer, their actions can range from mild problems such as the nausea to the life threatening foodborne diseases of the consumer. Some of the most common biological food contaminants in the food industry include the Norovirus, the Salmonella, the Nontyphoidal Salmonella, the Escherichia coli (E.coli), the Shigella, the Hepatitis A (29,30,31,32,33,34,35 and 36). These pathogens are the top six microorganisms that cause foodborne diseases in the US. Other pathogens such as the Clostridium botulinum, the Staphylococcus aureus, and the Listeria are top contenders in this category. The Biological food contaminants of the consumer or otherwise termed the microbiological contaminants. Every year, the actions of these pathogens accounts for at least 20% of the foodborne diseases in the US. The actions and examples of the biologically contaminated food (37,38,39,40,41 and 42). The Biological contaminations can produce distinct changes in food items of the consumer. In favorable conditions, such as in the temperature danger zone, The biological food contaminants can produce the following changes to the food, Produce acid and lower the pH of the product, Produce a bad smell, Change the color of the food, Soften the texture of the food. These changes indicate the food spoilage and that the food products types are not

safe for consumption anymore. The actions of biologically contaminated food of the consumer can be severe; they can always be prevented and controlled. The Proper food safety practices and constant monitoring are key to controlling biological contaminants. With an effective food safety management system, the sources of these food contaminants can be controlled and rooted out. Some biological food contaminants of the consumer are naturally part of fresh produce, especially those that are grown from the soil and are exposed to environmental contaminations, such as root crops. Perishable foods of the consumer, such as the unpasteurized milk, the milk products, the raw sprouts, the leafy greens, the raw fish, and raw meat, are very nutritious, and they make a good growing medium for infectious organisms. The actions of biologically contaminated food of the consumer can cause health risks when not handled properly. The drinking water contaminants can be a very dangerous source of these biological contaminants (31,32,33,34,35 and 36). The food Contaminants can enter the food production system during the food preparation process through contaminated water of the consumer when raw materials are washed. Any food ingredient must be properly prepared and cooked to prevent diseases causing microorganisms from causing any damage or harm to consumers. The Washing of Hands with blue latex gloves disinfecting tomatoes to decontaminate the fruit from the coronavirus. By Washing the fruit with water and lye to remove viruses (37,38,39,40,41 and 42).

The Chemically contaminated food of the consumer the Chemical contaminated food of the consumer refers to the presence of the unwanted chemicals in the foods that can compromise

their safety. The most common chemical contaminant examples in the food establishments include the Cleaning solutions, the Fertilizer residues, the Pesticides, the Industrial oils, the Additives, the Production by products. The mentioned chemical food contaminants can enter a

food business at any point and contaminate the foods of the consumer.

The Chemical food contaminants carry a great threat to the health of the consumers (43,44,45,46,47, and 48). Their actions can vary depending on the sources and the concentrations. The Chemically contaminated foods of the consumer can be divided into different categories based on their origin, the Industrial, the Agricultural, the Toxic heavy metal, the Natural but the chemically contaminated foods of the consumer occur less often than the biologically contaminated food of the consumer, their potential to cause the damage is significant. The actions and the examples of the chemically contaminated food of the consumer, Some the chemically contaminated food of the consumer, such as the cleaning agents, can cause the burning, the swelling, the gastric problems, and sometimes even the long-term actions (49,50,51,52,53 and 54). The Chemical substances may be introduced to the food being made through improper use and the food handling. Some examples of the chemically contaminated food in a food establishment, the Cleaning products, when not properly removed, can stay on the kitchen surfaces and then become transferred to the food of the consumer. The kitchen tools coated with the nonfood grade materials have been reported to have the contaminated foods of the consumer with the toxic metals. The Agricultural products such as the fertilizer residues and the pesticides can stay on the raw produce (55,56,57,58,59 and 60). The Substances such as the additives can be considered contaminants when added in excess or found in the products that shouldn't be in. The preparation of the food plays a great role when it comes to the chemically contaminated food of the consumer. The improper washing of the fresh produce can leave traces of the fertilizers or the pesticides that can find their way into the other food products types. The actions of these unwashed food contaminants can worsen when exposed to the heat and served to the customers. The food byproducts such as the

acrylamide can be used as an indication of the temperature abuse. This substance is a harmful chemical that is considered a carcinogen. The control of the chemically contaminated food of the consumer. The Sanitizer Concentration Log and The Cleaning and the Sanitation Checklist help to minimize and control cases of the chemically contaminated food in the commercial food facilities of the consumer (61,62,63,64,65 and 65).

The Physically contaminated food of the consumer

the physically contaminated food of the consumer is the presence of the unwanted foreign materials in the food of the consumer. These foreign materials can cause the injuries, the bleeding, the choking, and the broken teeth when ingested. The food physical hazards can block the air passage and prevent the normal breathing (66,67,68,69,70 and 71). The Physical food contaminants of the consumer can be categorized as the natural or the unnatural depending on the nature of the food contaminant. The physically contaminated food of the consumer include the presence of the Natural physical food contaminants, the Bone fragments the Feathers or hair , the Pit, stem, and the skin of the raw fruits , the Pest droppings , the Unnatural physical food contaminants , the Glass, the Plastic, the Soil or sand, the Metal shards , the Personal actions (e.g., jewelry). the Natural physical food contaminants are naturally part of the food materials of the consumer, such as the fruit stems, whereas the unnatural ones include the stones, the glass, and the metal fragments. The Physical food contaminants of the consumer, depending on their size, can be detected through the visual detection (72,73,74,75,76 and 77). The actions and examples of the physically contaminated food of the consumer when undetected, the physically contaminated foods of the consumer can cause serious injuries to the consumers. Some may cause the injury to the consumer, whereas others can create the cuts to the throat or the mouth of the consumer. The Physically contaminants can come from the food handlers and become transferred, such as the fingernails or the hair in the food, causing the injuries, these food contaminants can become precursors to other types of the contaminated food of the consumer, such as the biologically contaminated food of the consumer (78,79,80,81,82 and 83). The Fingernails can introduce the harmful organisms to the food. Such is the case when it comes to the physically contaminated food of the consumer from the pests. The Foodborne pathogens and diseases can result if these contaminants are introduced into the food of the consumer. This action highlights the importance of the pest management outside of the production area. Cases of the physically contaminated food of the consumer can result in a widespread food recall in the food manufacturers of the consumer. The presence of the physically food contaminants of the consumer has topped the charts of the food recalls. These food contaminants were recorded composed of the hard and the soft plastics, the metal, the rubber, and the glass, which may originate from the packaging materials and the unmaintained equipment. Fast food and the ecology. A man in a cap and a beard, holding a hamburger, and with disgust pulls out a thread (84,85,86, 87 and 88).

The effective way to control the different types of the contaminated food of the consumer

While these food contaminants of the consumer can easily go into the food of the consumer being prepared, the food handlers can prevent them with an effective food safety management system of the consumer.

The Proper preventive and control measures can be put in place to ensure that these contaminated foods of the consumer are well monitored. We can implement a digital The Food Safety Management System (FSMS) of the consumer. At Food Docs, we offer an intuitive solution to control the risk of the food poisoning. Using our smart Food Monitoring System, you can be sure that the food safety practices of the consumer are done effectively and

on time (89,90,91, 92, 92 and 94). The Common sources of the contaminated foods of the consumer can be addressed even before they can create any damage. The monitoring tasks set at autofill, our kitchen staff can save time and promote the accuracy of recordings. The Food Safety System of the consumer features detailed instructions on who perform the food safety tasks. Every employee will perform the tasks exactly as instructed, ensuring the food safety daily of the consumer. Upload our versions of the instructional materials to make training personal for our business (95,96,97,98,99 and 100).

The Monitoring tasks with detailed instructions. The main cause of the contaminated food of the consumer. The main cause of contaminated food of the consumer is the biological agents including the pathogenic bacteria, the viruses, the molds, the yeasts, and the parasites. Of the 250 identified foodborne diseases of the consumer by the Centers for Disease Control and Prevention (CDC), the majority are attributed to different types of the bacteria, the viruses, and the parasites. The Foodborne diseases due to the biologically food contaminants of the consumer cause symptoms such as the vomiting, the diarrhea, and the abdominal pain. When left untreated, they can become lifethreatening (101,102,103, 104, 105 and 106).

One factor why the biological food contaminants of the consumer are considered the main cause of the contaminated food of the consumer is their ability to transfer from one place to another. The Bacteria and other types of the pathogens can easily be spread through the cross contaminated food of the consumer. Due to the pathogens are too tiny to be seen, the food handlers who do not practice the safe food handling can spread them from one point to another. By simply holding the raw foods of the consumer and then a piece of the equipment or a clean utensil, the naturally present pathogens can spread (107,108,109,110,111 and 112). Who perform the bacterially contaminated food of the consumer can occur from one of our articles. The five most common ways for the food of the consumer to become contaminated in a food of the consumer establishment are the Cross contaminated food, the Lowquality food materials, the Improper food of the consumer storage conditions, the Unclean food preparation conditions and the Poor personal hygiene (113,114,115,116,117,118 and 119).

Conclusion:

This is why one of the best ways to prevent the microbially contaminated food of the consumer is to regularly and correctly wash the hands. The worst carrier of contamination in food service of the consumer is a food handler who does not regularly wash his or her hands. The Microorganisms can be controlled through the proper food handling practices. Their number can be easily controlled with the operations such as cooking properly, the cleaning and the sanitizing, and the storing foods of the consumer in the right conditions.

Conflicts of Interest

The authors declare no conflicts of interest.

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