

Biography



Evren GÖLGE (Ph.D. & MBA) graduated from Food Engineering Department of Middle East Technical University, Ankara-Turkey in 2000. He attended Master of Business Administration programme at Başkent University, Ankara-Turkey and completed in 2003. He earned his Ph.D. degree with the dissertation namely "STUDY OF REMOVAL OF HEAVY METALS FROM AQUEOUS SOLUTIONS BY UTILIZING HAZELNUT SHELL IN MODEL SYSTEMS" in the field of food quality control from Aegean University, İzmir-Turkey in 2012. Since 2012 he was working as assistant professor and holding the position of vice department chair at Food Engineering Department of Cumhuriyet University, Sivas-Turkey. He has been lecturing on the topics i.e. Thermodynamics, Food Chemistry, Instrumental Food Analyses, Engineering Economics. He has published 5 papers in SCI journals, 4 papers in the national journals and co-authored 2 books on food safety practices and level of awareness of food safety among dairy farmers and in milk collection centers. His research interests focused on quality control systems and food safety, non-thermal processing of food, detection of food contaminants, utilization of low cost adsorbents in food industry.

Selected food contaminants and their methods of detection

Food contamination refers to the presence of harmful chemicals and microorganisms in food which can cause consumer illness. The impact of chemical contaminants on consumer health is often apparent only after prolonged exposure at low levels such as [cancer](#). Unlike most microbiological agents, chemical contaminants present in foods are often unaffected by food processing methods. Chemical contaminants can be classified according to the source of contamination and the mechanism by which they enter the food product.

Environmental contaminants are chemicals that are present in the environment in which the food is grown, harvested, transported, stored, packaged, processed, and consumed. The physical contact of the food with its environment results in its contamination. Possible sources of contamination include agrochemicals including pesticides, plant growth regulators, veterinary drugs, air, water, soil, packaging materials, processing equipment resulting in the contamination of radionuclides, heavy metal, microbial toxins or toxic chemicals i.e. bisphenol A and dioxins.

Processing contaminants such as nitrosamines, polycyclic aromatic hydrocarbons (PAH), acrylamide etc. are generated during the processing of foods (e.g., heating, fermentation). They are absent in the raw materials, and are formed by chemical reactions between natural and/or added food constituents during processing. The presence of these contaminants in processed foods cannot be entirely avoided. Technological processes can be adjusted and/or optimized, however, in order to reduce the levels of formation of processing contaminants.

Various chemical and instrumental methods are utilized to detect the level of contaminants according to the type of food material and suitability of the detection method to the structure of the contaminant. Acceptable Daily Intake (ADI) levels and tolerable concentrations of contaminants in individual foods are determined on the basis of the "No Observed Adverse Effect Level" (NOAEL) in animal experiments, by using a safety factor (usually 100). With the help of the maximum permissible intake value (MPI) of contaminants the maximum residue level (MRL) or maximum permissible level (MPL) in food is calculated.