

Introduction to Food Toxicology: Pesticide residues and fungal toxins

Takayuki Shibamoto

Department of Environmental Toxicology, University of California, Davis

The field of toxicology is rapidly expanding in scope and relevance, and consequently formal academic programs encompassing teaching, training, research, and outreach are increasing. Also, the field of food toxicology has developed rapidly as a popular area of study in many institutions all over the world. The issue of food contaminants has recently come to attract attention not only among food scientists but also among common consumers. In particular, since poisonous contaminants, such as pesticides and fungal toxins, in either domestic or imported food products were reported in Japan, it became a pressing need to educate consumers carefully about the concept of poisons in order to avoid any kind of panics caused by food contamination. One of the most important matters in food toxicology at universities is to produce trained food toxicologists, who can educate consumers how to assess toxicities of food contaminants correctly. Because of the broad scope of toxicology it is imperative that students study the relevant disciplines and synthesize them into a coherent framework that will ensure a solid professional base. In this regard, concepts of basic toxicology and the principle of food toxicology—using the subjects of pesticide residues and fungal toxins found in foods as model subjects—will be presented. For example, one of the fundamental concepts of toxicology is that the dose determines the toxicity. As noted by Paracelsus (1493-1541), “All substances are poisons; there is none which is not a poison. The right dose differentiates the poison from a remedy.”

お茶の水女子大学
Ochanomizu University