Chapter 10
Food Adulteration:
A Challenge for Safer Food

Murlidhar Meghwal
Independent Researcher, India

Mahalakshmi M.
National Institute of Food Technology Entrepreneurship and Management, Kundli, India

Mahalakshmi R.
Indira Gandhi National Open University Regional Centre, Karnal, India

Simran Rani
Indira Gandhi National Open University Regional Centre, Karnal, India

Carolina Krebs de Souza
https://orcid.org/0000-0003-1340-5085
Regional University of Blumenau, Brazil

Sonam
Indira Gandhi National Open University Regional Centre, Karnal, India

Simmi Jain
M. O. P. Vaishnav College for Women, Chennai, India

Ankur Ojha
National Institute of Food Technology Entrepreneurship and Management, Kundli, India

Nitin Kumar
National Institute of Food Technology Entrepreneurship and Management, Kundli, India

Lekhraj Katariya
Export Inspection Council, Ministry of Commerce and Industry, Government of India, India

Kiran Meghwal
Mohanlal Sukhadia University, Udaipur, India

Mahalakshmi S.
M. O. P. Vaishnav College for Women, Chennai, India

Tuany Gabriela Hoffmann
Universidade Regional de Blumenau, Brazil

ABSTRACT

Food adulteration is a prevalent issue in the food industry. It affects safety and quality of food and causes harm to the health of the consumer. To reduce incidence of adulteration in food, it is necessary to study adulterants being added to food. Food safety concerns arise when adulteration occurs for a variety of reasons. The act includes use of expired ingredients, deceptive adulterated food labels, addition of harmful compounds to food, and more. Tests and techniques for suspected food items that are commonly adulterated with certain food or non-food products are studied and described here. The detection of adulteration in food sectors can be done qualitatively and quantitatively. Various methods like chemical analysis, spectroscopic, and chromatographic techniques used to detect adulteration are reviewed. Various laws and regulations are in effect around the world in order to prevent adulteration and ensure food safety to protect the consumers. Regulatory agencies play an important role in putting a check to food adulteration by monitoring the quality of food and penalizing defaulters.

INTRODUCTION

Food is one of the basic needs of every living being. Humans make food available in a processed or semi-processed form and consume it to support various physiological processes. Food commodities have always been vulnerable to fraudulent admixture or adulteration with cheaper inferior materials. Food fraud or adulteration is common, and such food adulteration degrades food quality, makes it dangerous to consume, and causes health problems in humans. Food fraud is defined as the intentional substitution, addition, tampering, or misrepresentation of food, food ingredients, or food packaging, as well as the making of false or misleading assertions about a product for financial advantage (Banti, 2020).

According to the Prevention of Food Adulteration Act, 1954, a food article is considered adulterated:

1.   if the article sold by a vendor is not of the nature, substance, or quality demanded by the purchaser and is to his prejudice, or is not of the nature, substance, or quality which it purports or represented to be;
2.   if the article contains any other substance which affects, or if the article is so processed as to affect, injuriously the nature, substance or quality thereof;
3.   if any inferior or cheaper substance has been substituted wholly or in part for the article to affect injuriously the nature, substance or quality thereof;

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