

Book Name: International Standards in Food Hygiene Management

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References:

The HACCP Food Safety Training Manual

Tara Pastor (John Wiley & Sons, Inc.)

RECOMMENDED INTERNATIONAL CODE OF PRACTICE GENERAL PRINCIPLES OF FOOD HYGIENE

CAC/RCP 1-1969, Rev. 4-2003

Department of Health and Human Services

Food and Drug Administration

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Preface

Food safety is a matter of huge public interest. Hardly a day goes by without a front-page account of some new and increasingly alarming hazard in our food supply. As an academic food hygienist with a long-standing interest in how food affects health, I cannot help but deal with issues of food safety, daily. Students, colleagues, and friends often ask me whether it is safe to eat one or another food or ingredient. They also ask safety questions, as their livelihoods depend on serving safe food.

As a member of the Food Advisory Committee to the IRI Food and Drug Administration in the mid-1990s, I learned about other special safety procedures, particularly a scientific method for reducing the risk of harmful bacteria in food called, obscurely, Hazard Analysis and Critical Control Point, or by its equally obscure acronym, HACCP. Despite its name, HACCP seemed to me to make a lot of sense, and I wondered why food companies—especially those that produce and process beef and chicken—seemed so reluctant to apply HACCP rules along with methods to reduce pathogens, and test for microbial contaminants to make sure that infected meat stayed out of the food supply.

It is my pleasure to find that my colleagues decide to edit a book deals with food safety management standards which really is necessary for food hygienists in the country.

This book reviews GMP in food processing era with reference to FDA and Codex Alimentarius documents in the first chapter. The second chapter contains the facts about Hazard Analysis, Critical Control Points (HACCP) with reference to THE HACCP FOOD SAFETY TRAINING MANUAL, which is the latest book in this era. The third chapter introduces the concepts of ISO 22000, which its source is the original ISO files. Finally the fourth chapter deals with the food safety hazards from farm to fork.

This book is targeted towards a wide, general audience. The information should be useful for individuals in government, NGOs, as well as semi-experts, students and the public interested in environmental management.

Guity Karim,

Professor, University of Tehran

God called generous and kind

This collection is provided by using of three main food hygiene reference books in the field of pathogenic factors, food GMP, HACCP, ISO 22000. Due to the lack of access to all mentioned fields for the specialists in food industries, designers and food quality management system, we persuaded to present them in one collection. Definitely, food is inseparable part of every one life and it has direct relation to human health, then elaborating some international standards for food production process and quality control is necessary and required. In this book was tried to presenting subjects as comprehensive, complete and classified that could be provided possibility of quick access for specialists needed to have activity in this field.

At first, it review Good Manufacturing Practice or GMP (also referred to as 'cGMP' or 'current Good Manufacturing Practice') is a term that is recognized worldwide for the control and management of manufacturing and quality control testing of foods, pharmaceutical products, and medical devices.

Since sampling product will statistically only ensure that the samples themselves (and perhaps the areas adjacent to where the samples were taken) are suitable for use, and end-point testing relies on sampling, GMP takes the holistic approach of regulating the manufacturing and laboratory testing environment itself. An extremely important part of GMP is documentation of every aspect of the process, activities, and operations involved with drug and medical device manufacture. If the documentation showing how the product was made and tested (which enables traceability and, in the event of future problems, recall from the market) is not correct and in order, then the product does not meet the required specification and is considered contaminated (adulterated in the US). Additionally, GMP requires that all manufacturing and testing equipment has been qualified as suitable for use, and that all operational methodologies and procedures (such as manufacturing, cleaning, and analytical testing) utilized in the drug manufacturing process have been validated (according to predetermined specifications), to demonstrate that they can perform their purported function(s).

What is more, it review Hazard Analysis and Critical Control Points (HACCP) is a systematic preventive approach to food safety and pharmaceutical safety that addresses physical, chemical, and biological hazards as a means of prevention rather than finished product inspection. HACCP is used in the food industry to identify potential food safety hazards, so that key actions, known as Critical Control Points (CCP's) can be taken to reduce or eliminate the risk of the hazards being realized. The system is used at all stages of food production and preparation processes including packaging, distribution, etc. The Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) use mandatory juice, seafood, meat and poultry HACCP programs as an effective approach to food safety and protecting public health. Meat and poultry HACCP systems are regulated by the USDA, while seafood and juice are regulated by the FDA. The use of HACCP is currently voluntary in other food industries.

HACCP has been recognized internationally as a logical tool for adapting traditional inspection methods to a modern, science-based, food safety system. Based on risk-assessment, HACCP plans allow both industry and government to allocate their resources efficiently in establishing and auditing safe food production practices. In 1994, the organization of International HACCP Alliance was established initially for the US meat and poultry industries to assist them with implementing HACCP and now its membership has been spread over other professional/industrial areas.

Hence, HACCP has been increasingly applied to industries other than food, such as cosmetics and pharmaceuticals. This method, which in effect seeks to plan out unsafe practices, differs from traditional "produce and test" quality assurance methods which are less successful and inappropriate for highly perishable foods. In the US, HACCP compliance is regulated by 21 CFR part 120 and 123. Similarly, FAO/WHO published a guideline for all governments to handle the issue in small and less developed food businesses.

And also, it review ISO 22000 is a standard developed by the International Organization for Standardization dealing with food safety. This is a general derivative of ISO 9000.

The ISO 22000 international standard specifies the requirements for a food safety management system that involves the following elements:

- Interactive communication
- system management
- prerequisite programs
- HACCP principles

Critical reviews of the above elements have been conducted by many scientists. Communication along the food chain is essential to ensure that all relevant food safety hazards are identified and adequately controlled

at each step within the food chain. This implies communication between organizations both upstream and downstream in the food chain. Communication with customers and suppliers about identified hazards and control measures will assist in clarifying customer and supplier requirements.

Recognition of the organization's role and position within the food chain is essential to ensure effective interactive communication throughout the chain in order to deliver safe food products to the final consumer.

The most effective food safety systems are established, operated and updated within the framework of a structured management system and incorporated into the overall management activities of the organization. This provides maximum benefit for the organization and interested parties. ISO 22000 has been aligned with ISO 9001 in order to enhance the compatibility of the two standards.

ISO 22000 can be applied independently of other management system standards or integrated with existing management system requirements.

ISO 22000 integrates the principles of the Hazard Analysis and Critical Control Point (HACCP) system and application steps developed by the Codex Alimentarius Commission. By means of auditable requirements, it combines the HACCP plan with prerequisite programmes. Hazard analysis is the key to an effective food safety management system, since conducting a hazard analysis assists in organizing the knowledge required to establish an effective combination of control measures. ISO 22000 requires that all hazards that may be reasonably expected to occur in the food chain, including hazards that may be associated with the type of process and facilities used, are identified and assessed. Thus it provides the means to determine and document why certain identified hazards need to be controlled by a particular organization and why others need not.

During hazard analysis, the organization determines the strategy to be used to ensure hazard control by combining the prerequisite programmes and the HACCP plan.

ISO is developing additional standards that are related to ISO 22000. These standards will be known as the ISO 22000 family of standards.

At last, it review Food borne illness (also food borne disease and colloquially referred to as food poisoning) is any illness resulting from the consumption of contaminated food.

There are two types of food poisoning: food infection and food intoxication. Food infection refers to the presence of bacteria or other microbes which infect the body after consumption. Food intoxication refers to the ingestion of toxins contained within the food, including bacterially produced exotoxins, which can happen even when the microbe that produced the toxin is no longer present or able to cause infection. In spite of the common term food poisoning, most cases are caused by a variety of pathogenic bacteria, viruses, prions or parasites that contaminate food, rather than chemical or natural toxins.

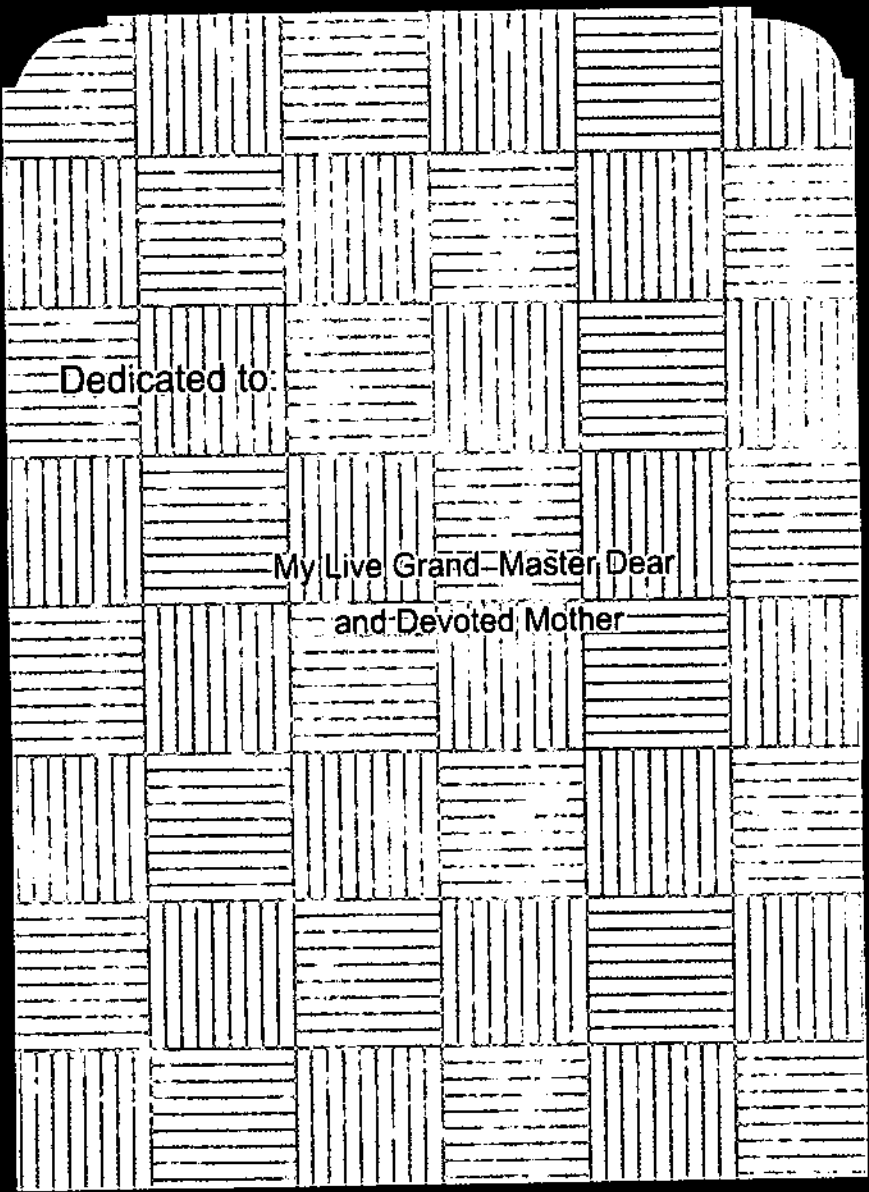
Food borne illness usually arises from improper handling, preparation, or food storage. Good hygiene practices before, during, and after food preparation can reduce the chances of contracting an illness. There is a general consensus in the public health community that regular hand-washing is one of the most effective defenses against the spread of food borne illness. The action of monitoring food to ensure that it will not cause food borne illness is known as food safety. Food borne disease can also be caused by a large variety of toxins that affect the environment. For food borne illness caused by chemicals, see Food contaminants.

Food borne illness can also be caused by pesticides or medicines in food and naturally toxic substances like poisonous mushrooms or reef fish.

The authors are thankful to Dr. Razmyar "Vice- president of veterinary organization council of Islamic Republic of Iran" for he providing the possibility of publishing this book. Also we are appreciative to the assistance of world food safety organization. For the final cal supports, requested any suggestions and constructive criticisms that can be used to eliminate probable defects and can help for improvements in the next volumes.

Dr.Hamed.Ahari

May 2009



Dedicated to:

My Live Grand-Master Dear
and Devoted Mother

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Chapter 1: Food GMP

Department of Health and Human Services

Food and Drug Administration

21 CFR Parts 201, 606, et al.

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Drug Products and Biological Products

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Chapter 2: HACCP

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