

CHAPTER 1

PREAMBLE

A National workshop on “Strategy for Ensuring Food Safety” was held in New Delhi during 6th to 8th December 2003. The major objective of the workshop was to develop a strategy, which will strengthen food control activities in India for improving safety and quality of food. The workshop was attended by a multisectoral and a multi disciplinary group consisting of experts in the area of food safety, toxicology, microbiology, epidemiology, academicians, administrators representatives of civil societies mostly representing consumer organizations and industry representatives.

Importance of Food safety

Consumption of unwholesome food endangers public health. Acute and chronic food borne diseases are caused by the ingestion of foods containing pathogenic microbes or toxic substances. In India some food borne diseases are commonly referred to as food poisoning and are often reported in newspapers. Only a very few of them are reported and when recorded most of them are categorized under ‘gastroenteritis’. Food-borne illnesses are often viewed as mild and self-limiting but they may be life threatening too. A few of them may have serious and chronic health implications. They are also important underlying factors leading to malnutrition with serious impact on growth and immune function of infants and children. Adults could suffer from chronic ill health. Even in an organization like the Indian Army with high standards of hygiene, a review of food borne diseases over a 25-year period indicated that there were 128 recorded outbreaks affecting over 5000 persons resulting in 11 deaths. The biological agents responsible for food borne diseases in the Indian context include bacteria, viruses, parasites, fungal and algal toxins, and various naturally occurring toxins (e.g. Lathyrus toxins), adulterants, various chemical agents including pesticide residues (Table 1).

Table 1: Selected Examples of Agents responsible for Food borne disease outbreaks in India

Bacteria: Bacillus cereus, Escherichia coli, Staphylococcus aureus, Vibrio parahaemolyticus
Mycotoxins: Aflatoxins, Clavine ergot alkaloids, Deoxynivalenol and Fumonisin
Algal toxins: Toxins from Algal blooms concentrated in shell fish and fish
Naturally occurring toxins inherently present in Foods: Unusual amino acids of Lathyrus sativus, Pyrrolizidine alkaloids of Crotalaria, Alkaloids in Argemone mexicana, Toxic proteins of Mushrooms
Chemical agents: Heavy metal contaminants like Copper Arsenic, Mercury and Tin, unpermitted or improperly used Organochlorine and Organophosphorous Pesticides and Food Additives

Ensuring food safety is an essential requirement for protecting public health. Besides direct health consequences, food borne illnesses can reduce productivity, impose substantial stress on health care system and reduce economic output. The magnitude of the food safety problem and its impact on the society is considerable.

Food safety at the household level

Much can be done towards ensuring food safety at the home level through observing healthy practices with respect to:

- Personal hygiene through washing of hands in safe potable water before undertaking cooking or handling of foods;
- Washing of vegetables before undertaking cooking;
- Hygienic precautions in preparation, handling, preservation and storage of foods;
- Keeping food properly covered and protected from contamination through flies;
- Consuming freshly cooked food and avoiding stale foods;
- Use of potable water for cooking purposes.

A considerable part of diarrhoeal diseases, which afflict children today in poor households, is attributable to lack of these simple precautions at the household level. Health Education Programmes laying emphasis on these simple precautions should be carried out through schools, primary health centers and the media in order to reach all communities.

There are however dangers to food safety arising from contamination of raw foods. These dangers can only be combated by actions at the State level. In this workshop the emphasis has been on devising mechanisms to ensure safety of raw foods before they reach the consumer or households.

The food system comprises of production of food, its post harvest handling including processing, storage and transportation, institutional or household cooking and consumption by the consumers. Before reaching the consumer food passes through many hands. Thus it is essential to ensure the safety of food throughout the food chain.

Food safety in India- Current status

The extent of food safety problem in India due to microbial contamination, natural toxicants and plethora of adulterants is compounded by the widespread consumption of unsafe street foods, especially in urban areas, unhygienic environment in public catering places, and sometimes improper handling in the household. There have been reports of food contamination from industrial pollutants, non-judicious use of agro-chemicals, mainly pesticides, and use of non-permitted food colors. Even the use of latest food technologies such as minimal hurdle technologies, if not properly applied can lead to serious health hazards. Development of cold pockets during storage, use of unapproved GMOs can lead to serious food safety problems. Then, there is the emergence of new food hazards. Over the past two decades, three more pathogens have been added to the list of food-borne pathogens.

The problems of food safety in public catering establishments are unique to India with over 35 lakh catering establishments, which are diverse in size, location and cuisine. The problems posed during transport of foods, ice prepared from contaminated water, design defects in lay out of kitchens, high turn-over of food handlers, lack of personal hygiene, improper waste disposal are considerable. Even in the organized sector such as Railway catering, the undesirable practices observed include lack of refrigeration facilities, unclean equipment, rodent infestation, inadequate hygienic practices, presence of pathogenic microorganisms in cooked food, deep frying practices coupled with repeated use of heated oils leading to oxidative deterioration. The main food safety problems from street foods are similar, the microbial contamination being the foremost. For example, extensive studies carried out in Kolkata and surrounding areas have indicated that over 50 % of the street foods had pathogenic bacteria. Chemical analysis of food indicated frequent use of non-permitted and toxic color metanil yellow in the preparations.

Despite the above, not so desirable a picture, there have been considerable efforts in improving food safety/quality scenario in the country by many Governmental Agencies. These include grading, certification and inspection measures such as those under AGMARK, BIS, FPO, MMPO, EIC, as well as the developmental activities of agencies like APEDA, MPEDA, Ministry of Food Processing Industries, Commodity Boards such as those for Coffee, Tea, Coconut, Bee (Honey), Horticulture, Dairy, Tropical produce (TRIFED). While each one of these operates under its own legislative provisions with a clear objective, they do have a positive impact on food safety and quality, which could be further enhanced through better coordination within an integrated system. A detailed presentation on the functioning of the Export Inspection Council indicated that they had already moved from inspection mode to quality assurance including HACCP through out the food chain coupled with appropriate monitoring. EIC activities cover eggs, milk, honey, poultry, meat and marine products meant for exports. The challenge of globalization, liberalization and post-WTO challenges are being successfully met by EIC with the signing of “Equivalency Agreements”, and MOUs with several countries thus drastically reducing the number of complaints from the buyers. Duplication in the functioning of official certifying agencies is still a matter that deserves early attention.

Consumer Perspective of Food Safety in India

There has been a sea change in consumer awareness about food safety and consumer protection issues. Consumers seek competent and reliable source of information about their concerns in this area. They want protection measures to be scientifically based and determined in consultation with all the stakeholders. Consumer organizations give a high priority to systemic change in governmental approach through the establishment of a professionally competent and autonomous food control agency. They demand transparency and accountability in the food control system. In addition there is a demand for recognized consumer organizations to lift food samples and the public prosecutors to take cognizance of complaints lodged by them on the basis of public analyst's report. According to them the fines should be proportionate to the business turnover of the company. Following the principles of natural justice, they want an opportunity to be given to manufacturers, to react to the results of analysis carried out by them, before making them public. They also exhort citizens not to suffer in silence or pocket injustice. The national Human Rights Commission has begun to look at unsafe products as affecting the fundamental right of the

citizens to life and liberty. They want manufacturers to be accountable and unjust enrichment to be recovered from the party concerned.

Current Food Control Status

At present there are a number of laws, control orders, legislative and administrative directives at the central and state level, which relate to food safety (Table 2). This leads to duplication, lack of coherence and they are not cost-effective. It is recognized by all the stakeholders that the current status of food control system is far from satisfactory and it has not succeeded in achieving the objectives set for it. Keeping this in view, the Confederation of Indian Industries (CII) has submitted to the Government of India, a proposal for an Integrated Food Law. The CII proposal refers to the establishment of an autonomous Food Regulatory Authority of India with two subsidiary bodies namely, “Council for food Safety “ and Food Safety Administration”.

Another proposal to update and improve the system comes from the Ministry of Food Processing Industries. Its proposal on a draft Food Safety and Standards Bill, 2003 is under active consideration by the government. Realizing that the present scheme of legislation is not adequate to provide safe food supply, the Ministry of Health is also considering a draft amendment of the PFA Act (Draft Prevention of Food Adulteration (Amendment) Bill, 2002). The work of Codex, coming in of WTO (SPS & TBT Agreements) and the demands of international food trade are compelling the countries to seriously consider revising and updating their food control system to improve food safety and provide better protection to the consumer.

Table 2: Agencies and Current acts/orders related to Food control in India and new Bills on the anvil

Agencies	Regulations
Ministry of Health	PFA Amendment Bill 2002 PFA Act
Ministry of Food Processing	Draft Food Safety and Standard Bill 2003 FPO
Ministry of Consumer Affairs	ISI Certification & Marks Act Vegetable Oil Products order Consumer Protection Act
Ministry of Agriculture	Agricultural Produce (Grading and Marketing) Act Sugar Control order Meat Products order Milk and Milk Products order
Ministry of Commerce	Export Quality Control and Inspection Act, Solvent Extracted oil Deoiled Meal and Edible Flour Control Order
Ministry of Human Resource Development	Infant Foods