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Food Safety Issues, An International Concern

by

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INTRODUCTION

Food safety has been of great concern to mankind since early civilization. Fermentation, a primitive method of food safety, still practiced until now, has been known to both Egyptian and Chinese civilizations. Elaborate food storage systems such as grain "silos" were built. It is amazing in the absence of scientific knowledge, ancient Egyptians when building these "silos" attempted to control humidity and avoid human and animal contamination through using an opening in the lower part of the "silos" to allow withdrawal of grains poured in it from above.

In recent history, the discovery of microorganisms, the wide use of pesticides and fertilizers, the advances in food industry and the rapidly expanding world food trade necessitated the establishment of various food safety measures.

The United Nations system recognized the crucial role of food safety with its health and economic consequences. The Codex Alimentarius was established in 1963 with the aim of protecting health of consumers, and to ensure fair practice in food trade. Various committees and subcommittees were formed. International agreements and declarations were announced. Innovative prevention approaches to insure food safety were developed. Foremost among these are the risk analysis framework and the hazard analysis critical control points approach (HACCP). In spite of these efforts, it is estimated that one third of the population in developed countries are affected by food born illness each year. The situation is even worse in developing countries where reported cases represent the tip of the iceberg. Water born and food born diarrheal disease kills approximately three million people each year. Two to three percent of food born disease leads to long-term ill health.

Several challenging issues exist. More will appear in the future. I shall briefly touch upon some of these challenges.

THE QUANTITATIVE RISK ASSESSMENT APPROACH

Historically food safety evaluation has been qualitative rather than quantitative. Many decisions were based on subjective observations and evaluations. Scientific advances led to efforts to quantify the risk associated with food. In deciding priorities the cost benefit approach is usually adopted. The use of quantitative risk assessment implies a vigorous scientific base, which may be lacking specially in developing countries. A number of the costs and benefits of food safety regulations are intangible and difficult to convert into monitory amounts. It is frequently difficult to compare between risks, which might be expressed in subjective terms to benefits, which can be expressed in economic terms. Can we quantify the quality of life or more dramatically the cost of the human life?

Although the concept of quantitative risk approach has to be maintained it has to include a subjective consideration of non-quantifiable issues as well as the various determinants affecting food safety.

SETTING AND IMPLEMENTING FOOD SAFETY REGULATIONS

Whichever food safety policy is adopted, the barrier is implementing the policy and enforcing the related laws and regulations. There is a need to bridge the gap between policy and practice, between theory and reality. Biases in prioritization are not infrequent, being driven by politicians seeking public support or by competing agencies or scientific institutions. In developing countries the situation is worse. Infrastructure may be lacking. There are many other competing health, social and economic priorities. How can you convince a decision maker in a poor country to spend, from a limited health budget, on the control of a food contaminant with a potential long-term carcinogenic hazard, when the majority of the population will die from other causes before they develop cancer?

International organizations and world scientists have to support developing countries in order to create the will and develop the skill to implement food safety control taking into consideration existing barriers and capabilities. They should assist them to conduct epidemiological studies on the prevalence of food born disease, up date their food laws and regulations and establish national or regional training

centers and appropriate laboratories. United Nations organizations must sensitize policy makers not to give low priority to food safety issues.

PUBLIC AWARENESS

Public opinion is increasingly becoming a driving force influencing government decisions on food safety. In developed countries, the public is pressing on more stringent safety measures, which are often not scientifically justified. Public fear of food environment is an unwanted consequence of increasing knowledge. Media frequently exploit fear than evaluate facts. Occasionally debates within the scientific community may be misinterpreted by the public to represent uncertainties.

It is the responsibility of the scientific community to develop its own dynamic proactive and timely public information system in order to keep the public aware of sound scientific information regarding food safety and alleviate unnecessarily costly concerns.

In many developing countries it is the other way round. Public awareness of the dangers and consequences of unsafe food is low. People react indifferently to safety control measures. Socio-cultural factors, poverty, illiteracy, and resistance to certain endemic food born pathogens are among many causes that contribute to this indifference. Because of economic or political factors, decision makers may be reluctant to take action to raise public awareness.

The scientific community should develop a public information campaign to overcome these barriers specially since it enjoys greater credibility than the government in developing countries.

COORDINATION

United Nations agencies involved in food safety can play a greater role in overcoming differences at the regional or the national level without jeopardizing the freedom of various partners. The conflicting reaction to mad cow disease (BSE) is an example. The differences in adopting the precautionary principle between Europe and US is another.

United Nations organizations should foster the “regulatory rapprochement approach” to overcome differences in safety regulations between countries through coordination, mutual recognition or harmonization. Because of political, economic and social reasons this is not an easy task it should be set as a goal to be achievable within the next decade.

Interdisciplinary coordination at the national domestic level has to be strengthened. In the US responsibility for regulating the safety of food supply is divided among various agencies (USDA, FDA, EPA etc) with occasional unnecessary controversies. In developing countries, a national codex committee should be authorized to coordinate responsibilities of the various ministries involved in food safety control. A prerequisite for risk-based strategies is an interdisciplinary approach involving strong collaboration among all sectors dealing with food born diseases surveillance and safety.

INTERNATIONAL FOOD TRADE

Food exports represent a major proportion of the income of many food exporting developing countries. It is of crucial economic interest to these countries to achieve quality and safety of their food at the international level. On the other hand, unnecessary food safety restrictions, not based on sound scientific evidence, may impede food exports and consequently their economic development, increasing poverty. The priority for the poor who cannot afford to purchase food is food availability rather than food safety. Combating poverty in food exporting countries in itself will contribute greatly to food safety control measures both at the domestic and international level. These concerns were specifically addressed in the agreements on Sanitary and Phytosanitary measures (SPS) and the Technical Barrier to Trade (TBT). Countries were allowed to adopt different food safety standards, provided they are justified by current available scientific evidence and will not create unnecessary technical barriers for international trade. How can this balance be achieved? Codex Alimentarius committee has no authority over its members to oblige them to implement codex standards. After the SPS agreement, CAC standards were recognized to serve as a yardstick or benchmark for national requirements. There is a

need for further international negotiations to render Codex Alimentarius Committee recommendations more binding either on voluntary or mandatory bases.

FOOD COMPANIES

Government food control services are increasingly adopting the approach of industry self-quality control measures. Official monitoring is carried by the concerned governmental authorities in order to insure that it is in compliance with regulations on the national level as well as across multiple countries. The share of multinational food companies in food consumption is increasing. Food companies are keen to keep their reputation through providing high quality safe food. Many of these companies established food processing factories in developing countries where food safety control measures may be less rigid than in developed countries and where the ability of the government to perform proper monitoring may be limited. Multinational companies should maintain the highest standard they adopt wherever their factories are.

Another concern is the patency issue. Under Trade Related aspects of Intellectual Property Rights agreement (TRIPS) most multinational companies hold patency rights on genetically engineered foods or plant varieties. Farmers in developing countries may have to pay fees to the concerned company before reusing their own harvested seeds, adding an economic burden on the farmers, which may be reflected on the national food safety system.

There is a need to strengthen the partnership between governments and the private sector along mutually agreed fair guidelines.

FUTURE TRENDS

Advances in transportation and the rapidly expanding food trade will necessitate stricter regulations on transnationally transported food and food products. A single source of contamination can have global consequences.

Food safety measures will benefit from advances in information and communication technology through timely interchange of information at the scientific and managerial level. Proper public education measures, however, should be taken to insure that the ease of public access to information does not contribute to public uncertainty.

As man made and national disasters continue safety measures for emergency feeding programs have to be further perfected. The tragic events of Sept. 11 raised international concern regarding the threat of possible biological chemical or radiological contamination of food. Proper preventive, monitoring and intervention measures have to be established and integrated within the existing food safety control systems.

Preference to fresh and minimally processed foods may challenge the industry to use less harsh processing regimens necessitating greater care in preparation and storage.

RESEARCH NEEDS

Basic research is required to cope with newly recognized food hazards; new pathogens, zoonotic diseases, toxic agents, irradiation hazards, and the possible side effects of genetically engineered food or new food processing techniques. More research will also be needed to judge the potential long term teratogenic, mutogenic or oncogenic effects of certain food contaminants.

Scientific advances during the next few years will hopefully lead to more efficient food safety control measures, which will impose less burden on the food business. There is concern, however, that as we learn more, we develop more costly sophisticated techniques that are beyond the financial capabilities of many countries. Applied research should focus on developing more accurate, scientifically based methodologies; which are feasible, affordable, sensitive and timely responsive to the rapidly advancing scientific knowledge.

We are looking forward for your free and valuable deliberations, which will discuss these and other issues. Your deliberations will enhance international cooperation to safeguard the health of mankind.