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## REGULATORY BODIES AND THEIR ROLE IN ANIMAL PRODUCT SAFETY IN CONTEXT OF INFECTIOUS DISEASES

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### Introduction

Animal products such as meat, milk, and eggs are significant sources of high-quality food for humans and represent approximately one-sixth of their food energy and one-third of their food protein on a global basis. The microbiological safety of these animal products is of paramount importance to protect human health. Microbial food-borne illnesses are the largest class of emerging infectious diseases. Infectious diseases caused by the consumption of animal products is an important food safety issue worldwide and have also become an important cause of decreased economic productivity in both developed as well as developing countries.

Rapid industrialization, change in food preferences and food habits, mass food processing and lack of effective food quality control system has led to the emergence of many food-borne pathogens. More than 250 known diseases are transmitted to humans through food and most of these diseases are infections caused by a variety of bacteria, parasites, and viruses that can be food-borne. Food products of animal origin are the major sources for many of infectious organisms, which include *Salmonella* spp., *Campylobacter* spp., *Listeria monocytogenes*, *Escherichia coli*, *Yersinia enterocolitica*, *Clostridium* spp.,

*Staphylococcus aureus*, *Vibrio* spp., *Mycobacterium tuberculosis* etc. In addition to these, a number of viruses and parasites also get transmitted through the consumption of animal products. Most of these food-borne pathogens cause serious and sometime fatal diseases in human being. Hence keeping in the view the impact of these food-borne pathogens, it is imperative to check their entry into the animal products to provide safe and wholesome food for human consumption. This control on the animal products is practiced by various agencies at national and international level.

### Regulatory bodies for control of infectious diseases in animal products

There are various bodies at national and international level which have the responsibility to ensure the infection free milk, meat, egg and other animal products.

#### Regulatory bodies at national level

Various agencies at national level govern the microbiological safety of the animal products. These agencies have the responsibility to establish microbiological standards for different animal products along with the formulation of standard detection procedures. Agencies such as BIS, FSSAI, EIC, APEDA, AGMARK etc. are

involved in regulating the indigenous, imported and exported animal products

### **Bureau of Indian Standards (BIS)**

National standardization activity started in India in 1947 with the establishment of the Indian Standards Institution (ISI) as a society under the Societies Registration Act 1860, to prepare and promote the adoption of national standards. In 1986 the national authorities made a review of the structure and status of ISI and assessed the impact made by it on the national economic development and the technological growth of various sectors of Indian industry. The Government of India felt that a new thrust had to be given to standardization and quality control activities, and that a national strategy had to be evolved for giving appropriate recognition and importance to standards and for integrating them with the growth and development of production and exports in different sectors. The

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Government of India therefore decided to create a statutory organization as the national standards body which was named as the Bureau of Indian Standards (BIS), with adequate autonomy as well as flexibility in its operations to achieve harmonious development of the activities of standardization, certification marking and connected matters. The Bureau of Indian Standards Act was passed by the Parliament in 1986 and BIS came into being on 1<sup>st</sup> April 1987. BIS has its Headquarters at New Delhi and its 05 Regional Offices (ROs) are at Kolkata (Eastern), Chennai (Southern), Mumbai (Western), Chandigarh (Northern) and Delhi (Central). BIS represent India in ISO. Microbiological criteria for various foods including those of animal origin are established by BIS through following standards.

<i>IS No.</i>	<i>Title</i>
2491 : 1998	Food hygiene—General principles—Code of practice
15000 : 1998	Food hygiene—Hazard analysis and critical control point (HACCP)—System and guidelines for its application

Acceptability of a product is based on the absence or presence, or number of micro-organisms including parasites, and/or quantity of their toxins/metabolites, per unit(s) of mass, volume, area or lot.

### **Food Safety and Standards Authority of India (FSSAI)**

The Food Safety and Standards Authority of India has been established under the Food Safety and Standards Act, 2006 as a statutory body for laying down science based standards for articles of food and regulating manufacturing, processing, distribution, sale and import of food so as to ensure safe and wholesome food for human consumption. The Act aims to establish a single reference point for all matters relating to food safety and standards, by moving from multi-level, multi-departmental control to a single line of command. The Act incorporates the salient provisions of the Prevention of Food Adulteration Act, 1954 and is based on international legislations, instrumentalities and codex Alimentarius Commission. In a nutshell, the Act takes care of International practices and envisages an over-reaching policy framework and provision of single window to guide and regulate persons engaged in manufacture, marketing, processing, handling, transportation, import and sale of food including that of animal origin.

### **The Agricultural and Processed Food products Export Development Authority (APEDA)**

The Agricultural and Processed Food Products Export Development Authority (APEDA) was established by the Government of India under the

Agricultural and Processed Food Products Export Development Authority Act passed by the Parliament in December, 1985. The Act came into effect from 13th February, 1986. In accordance with the Agricultural and Processed Food Products Export Development Authority Act, 1985, APEDA functions for fixing of standards and specifications for the scheduled products for the purpose of exports and also carry out inspection of meat and meat products in slaughter houses, processing plants, storage premises, conveyances or other places where such products are kept or handled for the purpose of ensuring the quality of such products.

### **AGMARK**

Agmark is an acronym for agricultural marketing. Agmark is a quality certification mark provided by the Government of India. This certification confirms that the product or commodity in better term is scientifically laid down. It confirms the quality control and the best hygienic condition of the food including that of animal origin. The certification also marks the food standards keeping in mind the requirements of WTO (World Trade Organization).

### **Regulatory bodies at international level**

Various regulatory bodies function at international level to harmonize the trade of animal products between different countries. These agencies are involved in establishing science based standards including microbiological standards to protect the importing countries from biological hazard and at the same time promoting the trade between the countries.

### **Codex alimentarius**

The Codex Alimentarius Commission, established by FAO and WHO in 1963 develops harmonized international food standards, guidelines and codes of practice to protect the health of the consumers and ensure fair practices in the food trade. The Commission also promotes coordination of all food standards work undertaken by international governmental and non-governmental organizations. The Codex Alimentarius international food standards, guidelines and codes of practice contribute to the safety, quality and fairness of the international food trade. Consumers can trust the safety and quality of the food products they buy and importers can trust that the food they ordered will be in accordance with their specifications. The reference made to Codex food safety standards in the World Trade Organizations' Agreement on Sanitary and Phytosanitary measures (SPS Agreement) means that Codex has far reaching implications for resolving trade disputes. WTO members that wish to apply stricter food safety measures than those set by Codex may be required to justify these measures scientifically. Codex members cover 99% of the world's population. More and more developing countries are taking an active part in the Codex process.

### **Sanitary and phytosanitary (SPS) measures**

The Agreement on the Application of Sanitary and Phytosanitary Measures, also known as the SPS Agreement, is an international treaty of the World Trade Organization. It was negotiated during the Uruguay Round of the General

Agreement on Tariffs and Trade, and entered into force with the establishment of the WTO at the beginning of 1995. Under the SPS agreement, the WTO sets constraints on member-states' policies relating to food safety (bacterial contaminants, pesticides, inspection and labelling) as well as animal and plant health (phytosanitation) with respect to imported pests and diseases. There are 3 standards organizations who set standards that WTO members should base their SPS methodologies on. They are the Codex Alimentarius Commission (Codex), World Organization for Animal Health (OIE) and the Secretariat of the International Plant Protection Convention (IPPC).

### **International Organization for Standardization**

The International Organization for Standardization known as ISO is an international standard-setting body composed of representatives from various national standards organizations. Founded on 23 February 1947, the organization promotes worldwide proprietary, industrial and commercial standards. It is headquartered in Geneva, Switzerland. ISO 22000 is a standard developed by the International Organization for Standardization dealing with food safety. It is a general derivative of ISO 9000. Food safety is linked to the presence of food-borne hazards such as infectious organisms in food at the point of consumption. Since food safety hazards can occur at any stage in the food chain it is essential that adequate control be in place. Therefore, a combined effort of all parties through the food chain is required. ISO 22000



integrates the principles of the Hazard Analysis and Critical Control Point (HACCP) system and application steps developed by the Codex Alimentarius Commission.

### **OIE**

The World Organization for Animal Health is the intergovernmental organization responsible for improving animal health worldwide. It was created by an international agreement as the International Office of Epizootics (still known by its French acronym Office International des Epizooties – OIE) on 25 January 1924. It is recognized as a reference organization by the World Trade Organization (WTO) and maintains permanent relations with 35 other international and regional organizations. Its headquarters are in Paris, France. The organization was created following the rinderpest epizootic in Belgium in 1920. The disease had originated in India and concern over the spread led to an international conference in Paris in March 1921. An agreement was signed on January 25, 1924 by 28 countries. OIE has a total of 178 members.

Each Member Country undertakes to report the animal diseases that it detects on its territory. The OIE then disseminates the information to other countries, which can take the necessary preventive action. This information also includes diseases transmissible to humans and intentional introduction of pathogens. Information is sent out immediately or periodically depending on the seriousness of the disease. OIE safeguard world trade by publishing health standards for international trade in animals and animal products. The OIE develops normative

documents relating to rules that Member Countries can use to protect themselves from the introduction of diseases and pathogens, without setting up unjustified sanitary barriers. OIE standards are recognized by the World Trade Organization as reference international sanitary rules. To provide a better guarantee of food of animal origin and to promote animal welfare through a science-based approach OIE Member Countries have decided to provide a better guarantee of the safety of food of animal origin by creating greater synergy between the activities of the OIE and those of the Codex Alimentarius Commission. The OIE's standard-setting activities in this field focus on eliminating potential hazards existing prior to the slaughter of animals or the primary processing of their products (meat, milk, eggs, etc.) that could be a source of risk for consumers. Among the Specialist Commissions, the one most closely connected with standardization is the Biological Standards Commission. This Commission establishes standards for diagnostic methods (including diagnostic preparations) and for vaccines. Its terms of reference reflect the Commission's obligation to participate in the standardization of biological products, including vaccines used for prophylactic purposes. The Biological Standards Commission is responsible for the preparation of the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, and the organization of Reference Laboratories for many of the diseases on the OIE List.

### **ICMSF**

The International Commission on

Microbiological Specifications for Foods (ICMSF, the Commission) was formed in 1962 through the action of the International Committee on Food Microbiology and Hygiene, a committee of the International Union of Microbiological Societies (IUMS). Through the IUMS, the ICMSF is linked to the International Union of Biological Societies (IUBS) and to the World Health Organization (WHO) of the United Nations. The primary goal is to provide timely, science-based guidance to government and industry on appraising and controlling the microbiological safety of foods including foods of animal origin.

### Conclusion

Animal Products plays an important role in the socio- economic life of each and every country. The importance of the microbiological safety of these products cannot be ignored in this era of emerging and reemerging animal food borne infections. An infectious disease caused by the consumption of animal products is an important food safety issue and various national and international agencies viz. BIS, FSSAI, APEDA, AGMARK, CAC, ISO, OIE, ICMSF etc. are working continuously to protect human health from these infections. These agencies are involved in laying down the standards regarding infectious diseases in the products of animal origin to protect the human health within the country and harmonizing the trade between the countries

### References:

OIE (2012). The role of official bodies in the international regulation of veterinary

biologicals. *Terrestrial Manual*, pp. 1348-1359.

Jean C. Buzby and Lorraine Mitchell (2006). Private, national and international food safety standards, *journal of food distribution research*, 37(1): 7-12.

<http://www.fssai.gov.in/>

<http://www.bis.org.in/>

<http://www.oie.int/>