Present Status of Safety of Foods of Animal Origin in Bangladesh

A.K.M.M. Anower
Microbiology, Barisal Govt. Veterinary College, Khanpura, Babugonj, Barisal. Bangladesh

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Introduction
Safe food plays an important role, whether domestically produced and consumed, imported or exported. Ensuring safe food is paramount for the protection of human health and for enhancement of the quality of life. The demand of safe and hygienic food of animal origin (beef, mutton, chicken, ducks, eggs, milk and milk products) is increased and will continue to rise because of high-income elasticity of demand. Milk production has increased from 1.3 million metric tones in 1988 to 1.7 million metric tones in 2001 and eggs of 2500 million are produced (1). The livestock sub-sector produced a total of 0.7 million metric tones in 2002 with an annual growth rate of 6.4%. Increased meat production has accrued from growth of chicken by 20%, where beef and mutton remained static (2). Throughout the safety of food chain of animal origin, Veterinary Public Health Services can play an important role with the public health demand issues of "Healthy animals ⇒ Safe foods ⇒ Healthy man."

Meat from food animals
Bangladesh has a large livestock population but for long time meat processing has remained to a very small section of people. The supply of meat constitutes for all communities of urban and rural areas a factor of economic, hygienic and public health importance, but the situation of meat production and processing with regard to handling, slaughtering and dressing of food animals takes place in a much disorganized way and unsanitary conditions. There are many self-made field abattoirs in rural and urban areas, small towns and even in cities where slaughtering of cattle, sheep and goat by unauthorized butchers in fields, bushes, backyards or at some street corners. The dressed carcasses are made into various cuts and sold to customers. There is neither any humane method of slaughter nor any pre-slaughter or ante-mortem examination. The public due to unawareness and non-enforcement of laws many a times buy meat, which can not ensure protection to consumers from the potential danger of inferior quality meat. The finished products are transported to meat shops by rickshaw, cart, vans and shoulder carriage, often lying on unclean surfaces and exposed to health hazardous agents. Blood, ruminal and intestinal contents are either left where the slaughter has taken place or washed down a drain to eventually end up in a pond or a watercourse. In this viewpoint many experts suggest that the slaughterhouse management followed in this country need to be improved to ensure production of good quality carcasses and safe hygienic meat.

Milk and milk products
There is no proper systems developed in the production of milk and their products in Bangladesh and the public community does not feel the importance of hygienic milk. Supply of milk from widely scattered sources, non availability of cooling before and during transportation, careless handling and distribution under improper hygienic condition and willful adulteration with pond or river water are all unsanitary activities under which milk is being sold. Moreover the transportation of milk from villages to urban market presents an enormous problem. Milk after production is kept in buckets or earthenware pails and sold to gowallas and milkmen, who ultimately collect milk in big vessels and transport to town and cities on shoulder carriage or bicycle or by road transports and rail. During transportation innumerable opportunities are provided for contamination. In many cases the vessels in which the milk is delivered without coverings, the utensils are not properly washed and cleaned and made possible bacterial contamination. The milkmen to prevent its splashing from the container place banana and date leaves in milk. They do not give attention that the leaves could be abode of pathogens. The microbiological standards of quality and the indices of sanitary quality to wipe out the threat of health hazard are not given due importance in Bangladesh.

Poultry meat
There is two marketing systems regulate the poultry meat sector in Bangladesh: Firstly marketing of rural scavenging poultry and secondly marketing of broilers. In the former farmers bring birds to a village market where they are either purchased directly by consumers or by middlemen. Then the middlemen transport birds to urban areas and sell either in wholesale markets or direct to retailers. Scalding, plucking and evisceration are done by consumers at their household level. During these pre-harvest and post-harvest activities hygienic conditions are not maintained. Recently there has been a rapid expansion in commercial processing of eviscerated ready-to-cook poultry. In urban areas where live broilers are sold to customer based on live weight, then birds are slaughtered, scalded and mechanically plucked (using a multi-bird drum plucker), eviscerated and packaged. But undoubtedly the poultry slaughtered and dressed under
Bangladesh conditions carry extremely high initial contamination. Improved hygienic measures will reduce the initial contamination and the proper sanitary applications to the distribution and retailing conditions and the inherent cold chain through to the consumers could in fact meet the challenge to deliver a safe good quality of poultry meat (Rahman and Rahman, 1998). Few peoples are known about the microbiological aspects, shelf life, keeping quality and food safety of commercially processed poultry meat in Bangladesh.

Eggs
The egg is an excellent example of a safe food product that normally is well protected by the intrinsic parameters. In Bangladesh eggs are not sold on the basis of quality cleanliness, size and weight but sometimes on the basis of production origin i.e. native or deshi eggs and farm eggs. Improper handling and bad transportation lead to rotting of eggs. However the preservation of egg quality and its public health importance are not given due attention. In Bangladesh, many people suffer from gastro-intestinal disturbances by taking egg products that are contaminated with health hazardous organisms. Hen's eggs are comparatively free from Salmonella organisms than those of ducks. Salmonella organisms have been found to be frequently present in dirty and cracked duck eggs (3). The higher incidence of Salmonella in duck eggs calls forth the public health significance and gives indication for its hygienic handling and processing in the preparation of foods for human consumption.

Fast foods
The food habits of people all over the world are changing at faster rate and they are increasingly depending on modern food technology. In many supermarkets of developed countries including Bangladesh, nearly 10,000 ready-to-cook types of food items can be seen. Some of the examples of commonly marketed popular food items of animal origin are Meat Burger, Beef patties, Chicken nugget, Corned beef, Meat soups, meat roll, Chocolate milk, etc. If these foods prepared under poor hygienic environment which may cause outbreaks of disease after ingestion by consumers.

Adulteration of foods of animal origin in Bangladesh
Adulteration of foods is a common age-long problem of Bangladesh. Corrupted traders of the country willfully and consciously practice this abominable work by mixing inferior spurious ingredients. The general public, food traders and food inspectors are all responsible for creating this evil practice. Most common practice of food adulteration is:

- Mixing with nonfood ingredients
- Substituting with under quality food substances or fabrication
- Texturing to mask the poor quality or under processing
- Adding decomposed foods to fresh foods and putting up for sale
- Misleading labels of foods
- Misrepresentation of foods
- Using health hazardous agents in foods as preservatives
- Attracting consumers by introducing colouring and flavouring chemical adulterants.

The concept of above mentioned non-food substances or ingredients to food products as adulterants have posed health hazards among consumers. In a number of cases there may be paralysis and long term carcinogenic effect. As a consequence the public are deprived of wholesome foods and are implicated with two major disadvantages:
- Paying more money but getting lower quality of foods.
- Highly injurious to health, even causing death.

Laws and regulations related to food safety of animal origin in Bangladesh
The role of Veterinary Service particularly official veterinary service has been changing and it is tilting towards regulatory affairs related to animal health, animal welfare, human health and food safety and conservation and protection of nature. Bangladesh is yet to develop a unified Food Safety Administration System and to formulate a Food Safety Policy. But it has a National Food and Nutrition Policy where attention has been given on food safety. There are significant activities in food safety and quality control are going on in the country. A number of Ministries, Departments and Agencies are involved in these activities (4). As a result the enforcement of the existing legislation becomes complicated to implement. Although Bangladesh has few existing Acts or ordinances having direct implication on livestock and a list of current legislation is shown in Table 1.

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Table 1 Existing Legislation related to foods of animal origin in Bangladesh

<table>
<thead>
<tr>
<th>Name</th>
<th>Enactment</th>
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<tbody>
<tr>
<td>1. The Cattle Trespass Act</td>
<td>1871</td>
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<td>2. The Cruelty to Animal Act</td>
<td>1920</td>
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<td>3. The Import and Export Act</td>
<td>1950</td>
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<td>4. The animal Slaughter (Restriction) And Meat (Control) Act</td>
<td>1957</td>
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<td>5. The Bangladesh Pure Food Ordinance</td>
<td>1959</td>
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<td>6. The Veterinary Practitioners Ordinance</td>
<td>1982</td>
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<td>7. Bangladesh Livestock Research Institute Ordinance</td>
<td>1984</td>
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<td>8. The Bangladesh Standards and Testing Institution Ordinance</td>
<td>1985</td>
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<td>9. The Diseases of Animal Act</td>
<td>2005</td>
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<td>10. The Animal and Animal Product Quarantine Act</td>
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Conclusion
Veterinary Public Health Service can make the best possible contribution to food safety. There should be a clear and well documented assignment of responsibilities and chain of command within the Veterinary Public Health Service. The government should provide an appropriate institutional environment to allow the Veterinary Public Health Service to develop and implement the necessary policies and standards and adequate resources for them to carry out their tasks in a sustainable manner. In developing and implementing policies and programmes for food safety of animal origin, the Veterinary Service should collaborate with other responsible agencies to ensure that food safety risks are addressed in a coordinated manner and also implemented national and international laws and regulations of food safety.

References