Reducing microbial contamination of meat at slaughterhouses in Cambodia

Sothyra Tum

Background

Food-borne diseases, in particular those related to meat and meat products, have recently become a matter of great public concern as they can transmit infections and diseases either through handling or ingestion by humans. There are number of potential contamination sources along the food processing chain resulting in a significant cause of morbidity and mortality in both the developed and developing countries (Schlundt et al., 2004). Seeing the important of foodborne disease and in response to an increasing demand for food safety and rising consumer concerns, the department of animal health and production (DAHP) focuses its attention on development of appropriate regulation over the processing of livestock and consumer protection policy that the Veterinary Public Health Office (VPHO) has been given the mandate.

Important to the problem

Foodborne diseases continue to be a significant burden on both human and animal health, and slow down our ability to provide safe food. A common strategy to prevent foodborne zoonotic infections in human is meat inspection. However, this procedure will not detect the presence of zoonotic agents since its infections may present without overt signs of illness and with no apparent macroscopic lesions and other microorganisms contaminated during the processing of meat where the general sanitary conditions in slaughterhouses are poor.

Sanitary conditions in slaughterhouses and meat retailers in Phnom Penh are poor as the methods of handling and slaughtering followed traditional ways. Lack of basic principles of hygiene, particularly the flow of slaughtering process; lack of personnel hygiene as workmen do not pay attention in protecting the products and/or themselves; operations are taken place on the floor resulting in high level of contamination.

Meat collected from slaughterhouses and meat retailers were contaminated with Salmonella spp. (35%), faecal coliforms (32%), total aerobes at 30°C (26%), sulfite reducing anaerobes (5%) and Staphylococcus aureus (2%) (Figure 2).

High multiple antimicrobial resistance profiles for Salmonella spp. to amoxicillin (8.3–90.0%), nalidixic acid (16.9–80.0%), sulfonamide (8.5–75.0%) and tetracycline...
(15.4–90.0%) in poultry meat collected from poultry retailers were also reported. In these circumstances, the quality of meat can be a major problem for consumers although seizure of dangerous meat in slaughterhouse is implemented.

Besides, implementation of slaughterhouse accreditation is also constrained by the poor coordination between line ministries and local governments, which creates an unfavorable political environment for law enforcement officers.

**Critique of policy options**

Slaughterhouses and meat and poultry retailers are sources of microbial contamination of meat due to poor hygienic practices. Meat inspection procedures proof to be effective for reducing the risk of foodborne diseases if properly implemented. However, this traditional method and laboratory analysis if implement together will be more effectively to detect the zoonotic agents and drugs or chemical residues in meat and poultry when present.

The poor coordination among the line ministries and local governments can be improved if unfavourable political environment such as gaps of current existing legislations, problems in enforcing the law, roles and responsibilities of each institution are clearly identified and addressed.

Improving the meat sanitary quality involves many changes including facilities and habits of slaughterhouses workers and regulation enforcement. There are two possible ways to encourage the slaughterhouse owners to make their establishments evolving towards a hygienic production: a public-driven encouragement with regulation enforcement and subsidies policy; and a customer-driven encouragement, by encouraging the customer to better choose the officially controlled and approved products.

The regulation enforcement must not be seen as a repressions mechanism, but as a close collaboration between the official services and the private sector in order to improve the sanitary quality of meat produced in Cambodia.

A regulation with specific technical requirements must be implemented slowly with a technical support. A subsidies policy can also be an important tool for general improvement of facilities since the benefit of such investments is probably difficult to assure in the actual meat market conditions.

**Policy recommendations**

The plausible solutions to reduce the risk of microbial contamination in meat and poultry produced and sell at slaughterhouses and in meat and poultry retailers are:
- strengthening capacity of veterinary inspectors on meat inspection procedures;
- enforcing slaughterhouse accreditation and monitoring the hygienic conditions of slaughterhouses and meat and poultry retailers;
- encouraging consumers to better choose the officially controlled and approved products;
- communicating the risk of foodborne zoonotic diseases with relevant stakeholders and general public; and
- establishing enabling environment for better coordination amongst different stakeholders.

**References**


