Risk based strategies in poultry meat production: Long term and short term risk assessment

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Risk assessment is a specialised and systematic means for organising and presenting information about various types of health hazards, including those associated with the consumption of poultry meat. Because it requires explicit, consistent, and logical treatment of data and their associated uncertainties, and consideration of current scientific knowledge, risk assessment is one of the most valuable tools available to serve regulatory agencies and competent authorities. Therefore, continuing programs of more formalised applications of risk assessment are necessary, to analyse specific risks associated with poultry and to evaluate alternative strategies for managing these risks.

To identify the food safety issue (hazard/commodity of concern) and provide information required by the risk manager to make a decision a so called risk profile can be performed. A risk profile lays out the key elements of a microbiological risk assessment in order to facilitate a short term decision-making on the part of the risk manager.

According to Codex Alimentarius (CX/FH 05/37/6) a short term risk profile includes:

1. Hazard-food commodity combination(s) of concern;
2. Description of the public health problem;
3. Food production, processing, distribution and consumption;
4. Other risk profile elements;
5. Risk assessment needs and questions for the risk assessors;
6. Available information and major knowledge gaps.

The risk profile is a decision making tool that, in a concise form, presents the current state of knowledge related to a food safety issue and describes potential microbiological risk assessment options that have been identified to date including the food safety policy context that will influence further possible actions.

For the purpose of risk assessment hazards like pathogenic micro-organisms associated with the production of chickens or with eating poultry can be divided in categories of pathogenicity and transmission by poultry or associated with eating poultry. Because of the number of reported human cases hazards like *Salmonella* spp., *Campylobacter* spp., are considered to be zoonotic agents with highest public health priority in Europe. Other bacteria known to be pathogenic in humans which are carried on or transmitted by broiler at retail are e.g. *Bacillus cereus*, *Clostridium perfringens*, *Shigella* spp., and *Staphylococcus aureus*. These bacteria are known to be pathogenic in humans and have been associated with eating poultry. Contamination by these human pathogens probably occurs during processing and preparation. Additional to the listed micro-organisms many other species are known to be pathogenic in poultry but of questionable pathogenic significance for healthy humans when carried on or transmitted by poultry meat at retail.

A strategy to reduce the incidence of human disease caused by these pathogens is to control foodborne zoonoses. This can be achieved by elimination of the pathogen at the most appropriate stage in the food chain. Where this is not feasible, incremental risk reduction at all stages of the food chain is the approach to adopt, together with communication to the final consumer of residual risks and their risk management. But the available means of risk reduction in the household do not substitute the risk management measures that are possible earlier in the food chain.

Primary initiatives will centre on the attainment of a tolerable level of the pathogen in food. Such levels are likely to be referred to in the future as *Food Safety Objectives* (FSO) and standards such as *Performance Objectives* (PO) and *Performance Criterions* (PC) as well as *Microbiological Criteria* (MC) at specific stages in the food/feed chain where the need is of critical importance to the performance of the overall chain.