

## Introduction to risk based meat inspection

By

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The European Food Safety Authority analyses data on zoonoses, antimicrobial resistance, microbiological contaminants and food-borne outbreaks. Campylobacteriosis and salmonellosis are the most often reported zoonoses in humans in EU with notification rates around 45 and 23/100,000 inhabitants per year respectively. Yersiniosis, VTEC, toxoplasmosis, Q-fever and listeriosis have notification rates below 2 while echinococcosis, trichinellosis, brucellosis and tuberculosis have notification rates less than 1/100,000 inhabitants. Based on the reported fatality rates and the total numbers of reported confirmed cases, the European Center for Disease Control (ECDC) estimated that in 2009 there were in EU approximately, 270 human deaths due to listeriosis, 90 deaths due to salmonellosis and 40 deaths due to campylobacteriosis. While the human incidence of Campylobacter seems to be fluctuating over the years 2005-2009 with no major changes a significantly decreasing trend in human cases of salmonellosis has been observed since 2005 (decrease of 17.4% compared to 2008). This decrease is supposed to be mainly due to successful controls of *Salmonella Enteritidis* in laying hens, breeding flocks and eggs. The microbial subtyping model for source attribution was applied to data from 24 MSs and attributed human sporadic salmonellosis to four animal reservoirs. The laying hen reservoir contributing with approx. 43% of cases, pigs contributed with approx. 27 % and turkeys and broilers contributed with 4% and 3% respectively. A total of 9.2% of all salmonellosis cases were reported as being travel-related, and 3.6% of cases were reported as being part of outbreaks with unknown source. Nine percent of cases could not be attributed to any source included in the model.

Several different control options have been assessed in relation to their efficacy of reducing the public health risk from Campylobacter in broiler meat. After slaughter, a 100% risk reduction can be reached by irradiation or cooking of broiler meat on an industrial scale. More than 90% risk reduction can be obtained by freezing carcasses for 2-3 weeks. A 50-90% risk reduction can be achieved by freezing for 2-3 days, hot water or chemical carcass decontamination. Achieving a target of 25% between flock prevalence (BFP) in all MS (and assuming that those with lower BFP keep this) is estimated to result in 50% reduction of public health risk. A public health risk reduction > 50% could be achieved if all batches would comply with a microbiological criteria with a critical limit of 1000 CFU/gram of neck and breast skin, while 15% of all tested batches would not comply with these criteria.

Based on qualitative risk assessment of human pathogenic microorganisms from pig carcasses within the EU, *Salmonella* spp. is considered of high relevance and *Yersinia enterocolitica*, *Toxoplasma gondii* and *Trichinella* spp. as of medium relevance. Effective control of the main hazards (*Salmonella* spp., *Yersinia enterocolitica*, *Toxoplasma gondii* and *Trichinella* spp.) in the context of meat inspection is possible only through a comprehensive pork carcass safety assurance program combining a range of preventative measures and controls applied both on-farm and at-abattoir in a longitudinally integrated way.

References:

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