

Lessons learnt modelling

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Use of risk assessment models

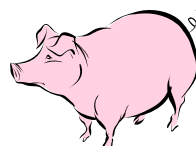
- Risk assessments good way of summing up our knowledge and lack thereof
- Quantitative analyses/modelling
 - Gives more precise answers
 - But prone to errors
 - Difficult to critically review
- Qualitative analyses simpler, but model behind sometimes more complex
- Examples EFSA Salmonella in swine risk assessments, meat inspection



Qualitative assessment

Risk assessment and mitigation options of *Salmonella* in pig production", *The EFSA Journal* (2006), 341, 1-131

- Pork, after eggs and poultry meat, a major source of human foodborne salmonellosis
- All serovars possible hazard for public health
- No universal mitigation option capable of eliminating *Salmonella* entirely
- Control *preventive* actions throughout food chain



Quantitative answers

Quantitative Microbiological RiskAssessment of *Salmonella* in slaughter and breeder pigs. *EFSA Journal* 2010;8(4):1547.

- 10-20% of human *Salmonella* infections attributable to pigs
- An 90% reduction lymph node prevalence comparable reduction in the number of human cases
- Hierarchy of control measures suggested
 - a high prevalence in breeder pigs to be addressed first,
 - followed by control of feed
 - then control of environmental contamination



Lessons learnt in EFSA

Scientific Opinion on Reflecting on the experiences and lessons learnt from modelling on biological hazards. EFSA Journal 2012;10(6):2725.

- Quantitative models in RA essential
 - proportionate response to a situation
 - balance risks, benefits and costs.
- Key lessons
 - Fit for purpose and simplicity (Ockam's razor)
 - Same vocabulary for same risks (avoid concern, significant, negligible)
 - Close interaction with those asking the questions needed for good answers
 - Documentation should be standardized
- Risk ranking might be helpful



Simple model for ranking risks in meat inspection

