EFSA's scientific report on epidemiological indicators for meat inspection of swine

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Third Round Table Conference on Revision of Meat Inspection
14 December 2011

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Outline of the presentation

- Request for the technical assistance related to meat inspection mandate
- EFSA's report on epidemiological indicators for meat inspection of swine
  - Approach taken
  - Indicators proposed
- Progress with the meat inspection mandate
  - other animal species

Terms of reference (ToRs):

- Define <u>harmonised epidemiological criteria</u> (e.g. prevalence, status of infection, production systems) for specific hazards already covered by current meat inspection (trichinellosis, tuberculosis, cysticercosis, …) and for possible additional hazards identified in a scientific opinion on the hazards to be covered by inspection of meat (see Annex 1), which can be used to consider adaptations of meat inspection methodology.

- Provide <u>a summary of comparable data</u> from Member States based on the above defined harmonised epidemiological criteria, if existing, e.g. from ongoing monitoring in humans, food or animals.

- Recommend <u>methodologies and minimum monitoring/inspection requirements</u> to provide comparable data on such harmonised epidemiological criteria, in particular if comparable data are missing.

Key definitions and decisions made within the mandate

- To use term "**indicators**" instead of "criteria" and to cover only biological hazards

- **Harmonised epidemiological indicator (HEI) =** prevalence or incidence of the (biological) hazard at a certain stage of food chain or an indirect measure of the hazards (such as audits of farms) that correlates to a human health risk caused by the hazard

- **HEIs** to be compatible with the new meat inspection methods proposed by the EFSA opinion

- **HEIs** were prepared by EFSA's Expert Working Group in close collaboration with Biological Hazard panel and its Working Group

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Selection of the epidemiological indicators

- The HEIs were selected through harmonised approach, which included
  - Listing the <u>most important risk factors</u> related to the hazard throughout the entire meat chain (farm to fork)
  - Identifying the <u>possible indicators</u> for public health and for changes in meat inspection
  - Evaluating the possible indicators based on their <u>quality, appropriateness, data availability and feasibility</u> and using a scoring system

  → the most appropriate indicators (HEIs) selected for each hazard

- Hazards: *Salmonella, Yersinia, Toxoplasma, Trichinella, Cysticercus, Mycobacteria*

- HEIs proposed include
  - Prevalence of the hazard in animal populations or on carcasses
  - Auditing of farms (controlled housing conditions) or animal transfer or slaughterhouse conditions

- A set of epidemiological indicators suggested for each hazard

- The indicators can be used by risk managers for different purposes, alone or in combinations, at national, regional or at herd/ farm level

The foreseen use of epidemiological indicators (HEIs)

- The information from the epidemiological indicators (HEIs) may be used by the Commission and Member States to
  - consider if <u>adaptations in current meat inspection</u> methods may be applied (e.g. use in risk analyses);
  - help to <u>categorise farms/ slaughter batches/ slaughterhouses</u> according to risk related to a particular hazard in the proposed new pork safety assurance framework; and
  - <u>set targets</u> for final chilled carcasses as foreseen in the proposed new pork safety assurance framework.

- By <u>combining information from different HEIs</u> the influence of transport/lairage or slaughter process on the hazard carriage / carcase contamination may be assessed

Epidemiological indicators – *Salmonella* - pigs

Hazard: *Salmonella*

Indicators (HEIs) (animal/ food category/other)	Food chain stage	Analytical / diagnostic method	Specimen
HEI 1 *Salmonella* in breeding pigs	farm	Microbiology-serotyping	Pooled faeces
HEI 2 *Salmonella* in fattening pigs prior to slaughter	farm	Microbiology - serotyping	Pooled faeces
HEI 3 Controlled housing conditions at farms (breeding and fattening pigs)	farm	auditing	
HEI 4 Transport and lairage conditions (both breeding and fattening pigs)		Auditing	Time, mixing
HEI 5 *Salmonella* in fattening pigs – in coming to slaughter process (evisceration)	Slaughterhouse	Microbiology-serotyping	ileal contents
HEI 6 *Salmonella* in fattening pigs –carcass after slaughter process prior to chilling	Slaughterhouse	Microbiology - serotyping	Carcass swab
HEI 7 *Salmonella* in fattening pigs –carcass after slaughter process and chilling	Slaughterhouse	Microbiology - serotyping	Carcass swab

Epidemiological indicators – *Yersinia,* mycobacteria - pigs

Hazard: *Yersinia* – lack of information on risk factors

Indicators (animal/ food category/other)	Food chain stage	Analytical method	Specimen
HEI 1 *Y. enterocolitica* in fattening pigs - in-coming to slaughter (evisceration)	Slaughter-house	Microbiology (detection - biotyping)	Tonsils or faeces
HEI 2 Slaughter method- separation of head	Slaughter-house	Auditing	
HEI 3 *Y. enterocolitica* in fattening pigs – carcases after slaughter process prior to chilling	Slaughter-house	Microbiology (detection - biotyping)	Carcass swab
HEI 4 *Y. enterocolitica* in fattening pigs – carcass after slaughter process and chilling	Slaughter-house	Microbiology (detection - biotyping)	

Hazard: *Mycobacterium*

Indicators (animal/ food category/other)	Food chain stage	Analytical method	Specimen
HEI 1 Human pathogenic mycobacteria in pigs at slaughter	Slaughterhouse	Visual meat inspection + Microbiology	Suspected lesions

Epidemiological indicators for *Toxoplasma* and *Cysticercus* - pigs

Hazard: *Toxoplasma*

Indicators (HEIs) (animal/ food category/other)	Food chain stage	Analytical / diagnostic method	Specimen
HEI 1 Farms with officially recognised controlled housing conditions (including control of cats and boots)	farm	auditing	
HEI 2. *Toxoplasma* in breeding pigs from officially recognised controlled housing conditions	slaughterhouse	serology	blood
HEI 3. *Toxoplasma* in all pigs from non-officially recognised controlled housing conditions	slaughterhouse	serology	blood

Hazard: *Cysticercus*

Indicators (HEIs) (animal/ food category/other)	Food chain stage	Analytical / diagnostic method	Specimen
HEI 1 *Cysticercus* in all pigs (both fattening and breeding pigs)	slaughterhouse	Visual meat inspection + PCR	meat

Epidemiological indicators – *Trichinella* - pigs

High risk pig populations and wildlife targeted

Hazard: *Trichinella* **in pigs**

Indicators (HEIs) (animal/ food category/other)	Food chain stage	Analytical / diagnostic method	Specimen
HEI 1 *Trichinella* in free-range and backyard pigs (both fattening and breeding pigs)	slaughterhouse	digestion	meat
HEI 2 *Trichinella* in pigs from non-officially recognised controlled housing conditions (both fattening and breeding pigs)	slaughterhouse	digestion	meat
HEI 3 Farms with officially recognised controlled housing conditions and *Trichinella* free status	farm	auditing	
HEI 4 *Trichinella* in wildlife: wild boar, bears, raccoon dogs, foxes, jackal, wolf, lynx etc.	environment	digestion	meat

Progress made with HEIs for the other animal species

- The same approach as for pigs will be applied for the other animal species covered by the meat inspection mandate
- The reports on HEIs to be published at the same time as the relevant opinions
- Working group (WG) on poultry started in June 2011
- WG on bovine animals will start in January 2012
- WGs on small ruminants, farmed game and solipeds to be established in 2012

Acknowledgements

EFSA wishes to thank the Working group members who prepared the report on HEIs for pigs:

- Jens Kirk Andersen, Angus Cameron, Mariann Chriel, Alasdair Cook, Lieven De Zutter, Javier Dominguez, Pierre Dorny, Christina Frank, Angela Lahuerta-Marin, Geert Molenberghs, David Nolan, Edoardo Pozio, Claude Saegerman, Gilles Salvat

Thank you for your attention !

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