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LIAISON CENTRE FOR THE MEAT PROCESSING INDUSTRY IN THE E.U.
CENTRE DE LIAISON DES INDUSTRIES TRANSFORMATRICES DE VIANDES DE L'U.E.

Modernisation of meat inspection:

Danish experience regarding finisher pigs

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Brussels
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CLITRAVI - Liaison Centre for the Meat Processing Industry in the EU

President: Mr. Robert Volut (FR)
Vice-Presidents: Mr. Tamas Eder (HU), Mr. Jos Goebbels (NL) and Mr. Marcello Veronesi (IT)

24 Member States (28 members)
+ 3 Associated members from Norway and Turkey

Established on 22 May 1958

Industry with **turnover** ~ 66.3 billion €
~ 15,000 **companies** (mainly SME´s)
Workforce ~ 560,000 people
Total **production** ~ 12.5 mill. tons/year

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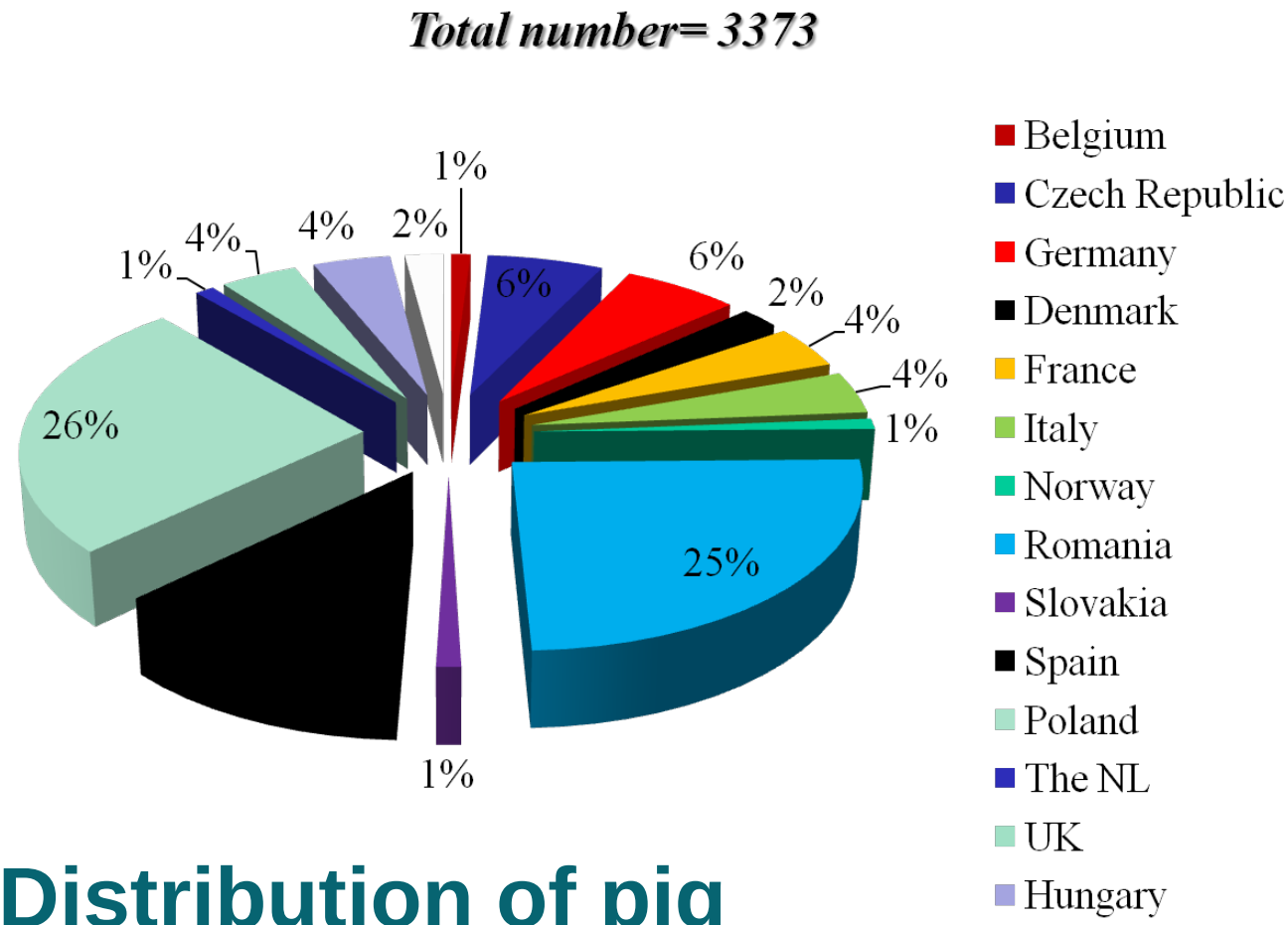
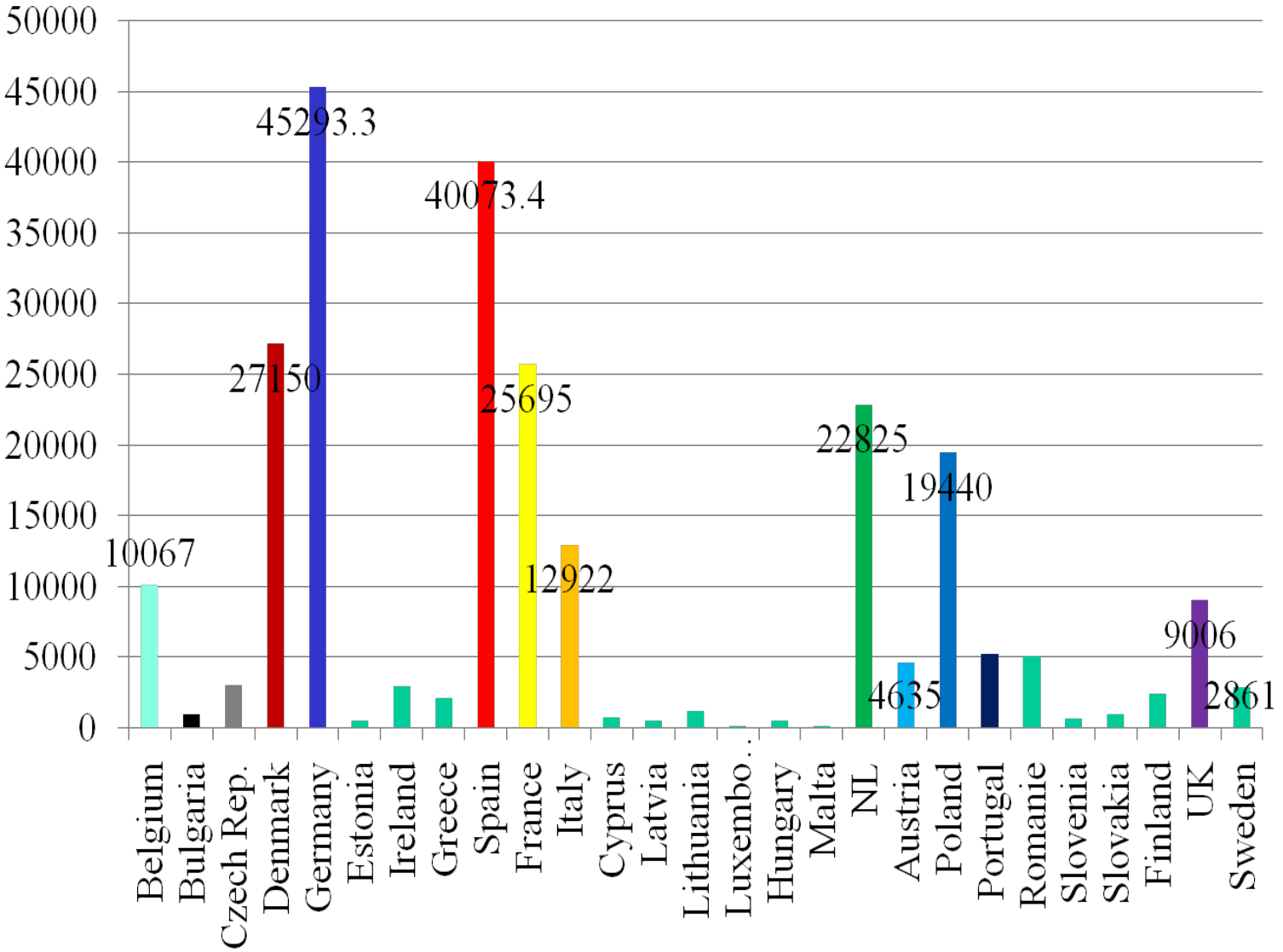


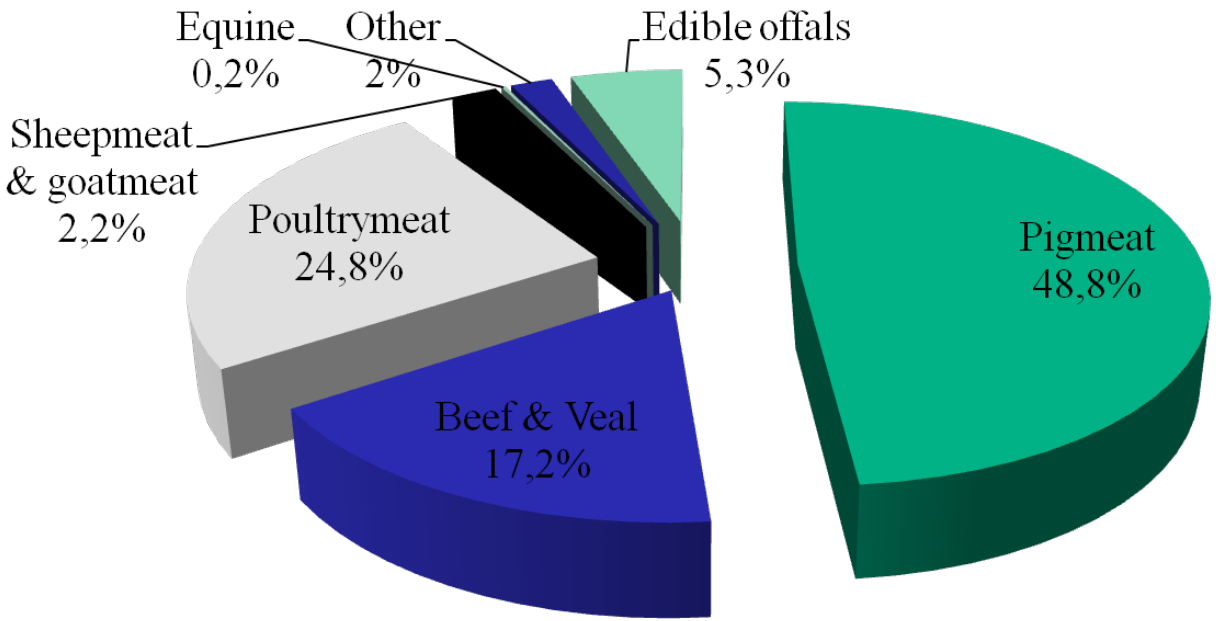
Distribution of pig slaughterhouses in EU

No. of slaughtered pigs in EU (x 1,000)



2009 data

EU Gross internal Production



2008 data

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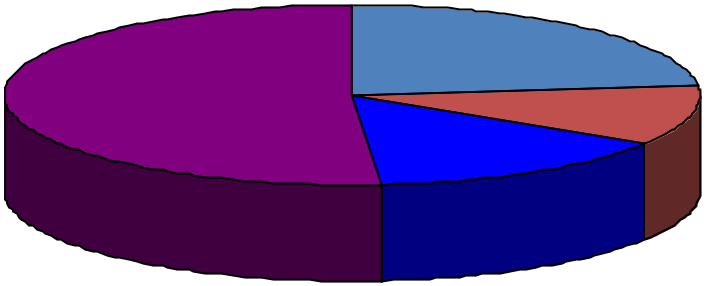
Pigmeat - global production (million tonnes)

Total: 83.3 million tonnes 1999
Total: 97.0 million tonnes 2009
Total: 98.7 million tonnes 2010 (forecast)



EU-27 22.1 mill. t 22.7%

China 48,7 mill. t 50.2%

USA 10,4 mill. t 10.7%

Others 13.5 mill. t 13.9%

Others:	
Canada	**2.0 mill. t 2.1%**
Brazil	**3.2 mill. t 3.3%**
Russia	**2.1 mill. t 2.2%**
Japan	**1.3 mill t 1.3%**
Korea, Philippines, Mexico and Taiwan	**4.9 mill. t 5.0%**

Source: GIRA

Now to modification of meat inspection….

Recent changes in EU legislation enable introduction of modifications of traditional meat inspection

Relevant for finisher pigs from integrated production systems housed under controlled housing conditions

Requires risk assessment

Demonstrate that food safety is not reduced

Aim

Use of knife should be reduced

Will decrease spreading of food safety hazards like *Salmonella* and *Yersinia*

Food safety value of routine incision into mesenterial/mandibular lymph nodes and the heart of Danish finisher pigs from controlled housing systems?

Effect on animal health?

Will it be more difficult to identify animal disease?

Joint effort

Risk assessment conducted following international guidelines as joint effort between

- University
- Industry and
- Veterinary services

danish meat association

Ministry of Food, Agriculture and Fisheries
Danish Veterinary and Food Administration

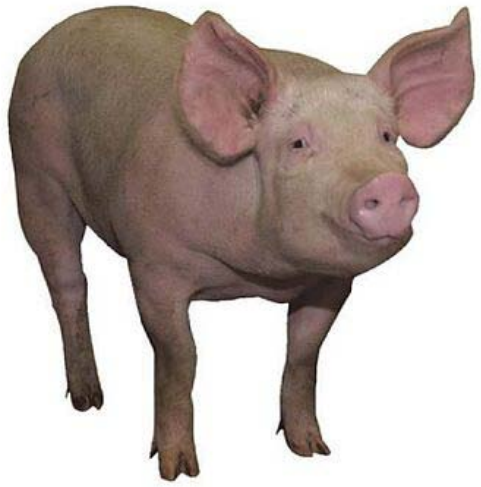
Materials

Data from slaughterhouse and laboratory statistics as well as information from literature and expert opinions used

Horsens project, 1993

Detailed data from double control of 183,383 finishers

Conclusion: limited difference between visual and traditional control in ability to identify lesions



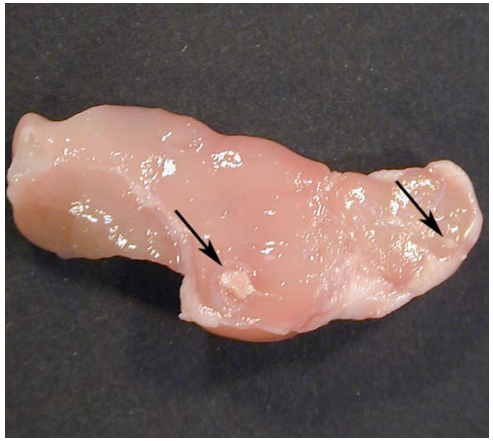
Materials

Export nation USA required
up-to-date in-country data

Data from 10 slaughterhouses

- 63 lymph nodes with granulomatous lesions
- 88 hearts with endocarditis

Samples underwent microbiological and pathological examinations



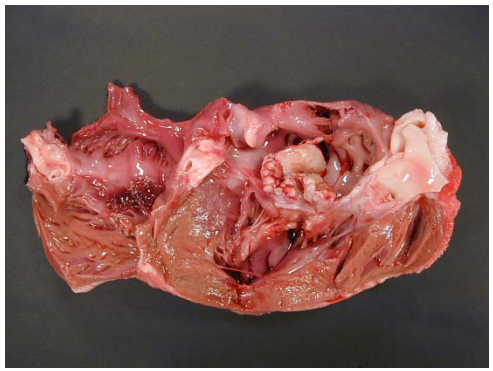
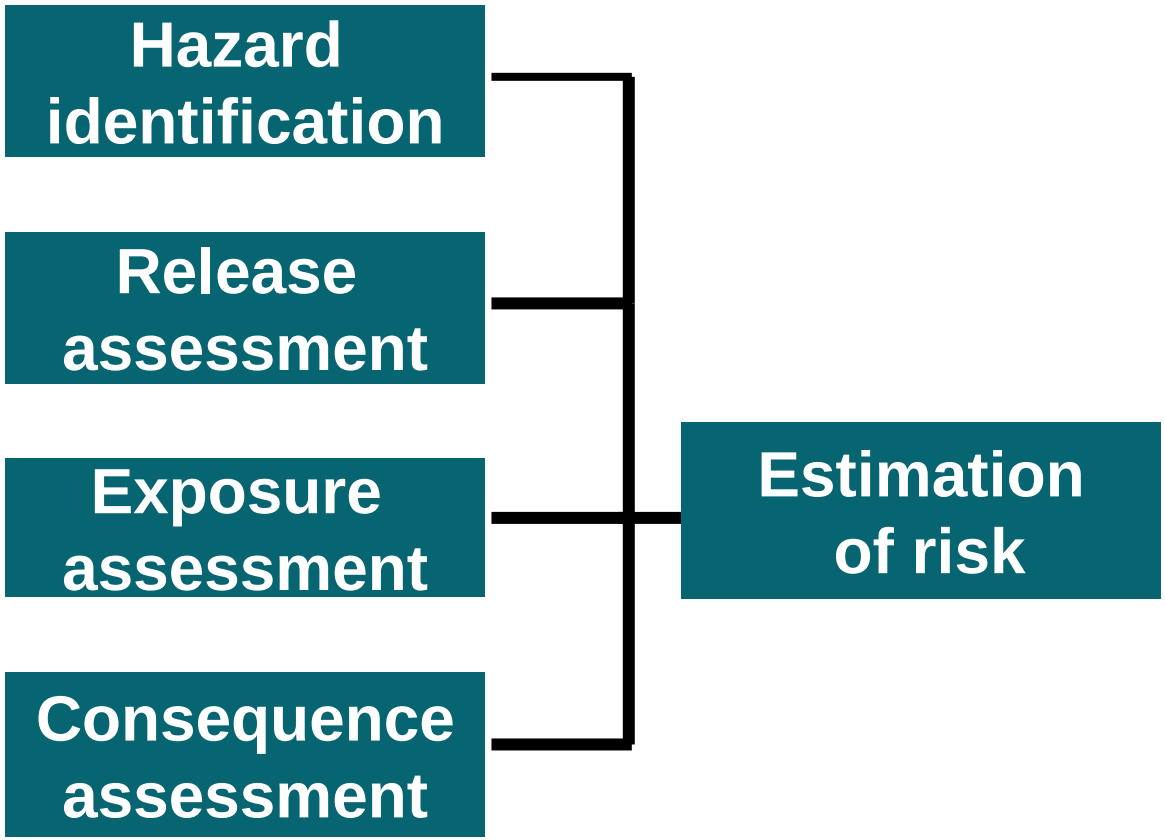


Photo: Henrik Elvang Jensen

OIE approach used



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Bovine Tuberculosis

The most important hazard

- Denmark officially free since 1980
- Last case seen in 1988
- Never found in free-ranging wildlife

Surveillance in cattle and pigs

- Clinical surveillance for cattle
- Meat inspection of cattle, sows and boars
- Testing during import/export of breeding animals

If lymph nodes are not opened routinely, granulomatous lesions might pass meat inspection unnoticed

- Granulomatous lesions might be indicative of bovine TB

Lymph nodes

Observed prevalence of granulomatous lesions in DK lymph nodes = 0.01-0.02%

Found primarily in mandibular or mesenterial lymph nodes

- Results in local condemnation

If found in lever or lungs:

- Culture required and decision depends on result

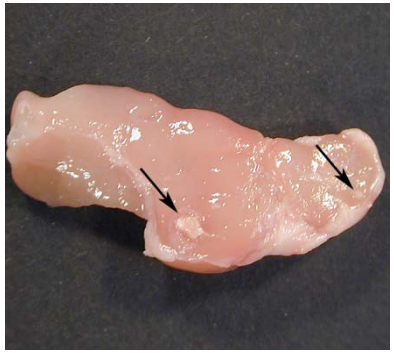


Photo: Henrik Elvang Jensen

All 63 lymph nodes examined were negative for *Mycobacterium* spp.

Rhodococcus equi was most commonly found (63%)

- This organism not pork-borne

Avian tuberculosis

Backyard poultry, zoological gardens and pigs

Prevailing opinion in literature:
Avian tuberculosis not pork-borne

Mostly only one livestock species on premises
=> **Negligible risk from poultry to pigs**

Mainly caused by use of raw peat as litter material
=> Use of raw peat prohibited by DK swine industry
=> Herds audited every 3 years as part of Danish Standard

Mandibular/mesenterial lymph nodes used as pet food after adequate heat-treatment
=> **No risk for pets**

Hearts

If hearts are not opened routinely a heart with endocarditis might pass meat inspection unnoticed

- Endocarditis in 0.01% of hearts

Primarily as result of infection with

- *Streptococcus suis* or *Erysipelothrix Rhusiopathiae*
- Confirmed by literature and own data

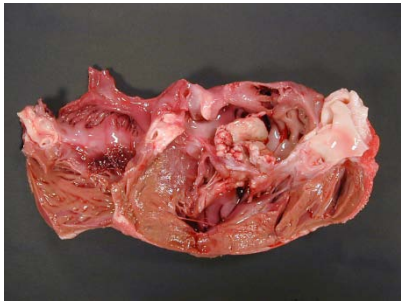


Photo: Henrik Elvang Jensen

S. suis and *E. rhusiopathiae* have limited capacity to be food-borne

Contact infections occur

- Slaughterhouse workers at risk - Might get infection in wounds
- Years of focus on working environment limit risk
  - Not considered a problem by DK slaughterhouse workers' union

Hearts

Statens Serum Institute study of human meningitis

- Only one case of *S. suis* found in DK during a 3-year study
- Case was a farmer
- Indicates that infection might have been caused by contact

Presence of endocarditis does not *per se* make the meat unfit for human consumption

If other lesions indicative of systemic disease are observed, carcass should be subjected to extended meat inspection following traditional rules

Hearts

Hearts should be opened after meat inspection, and prior to sales

Blood coagulum should be removed

If lesions are found in a heart, heart should be condemned

- Will reduce exposure of bacteria consumers

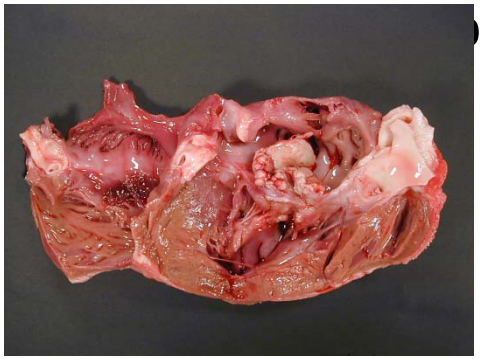


Photo: Henrik Elvang Jensen

Effect on animal health

New EU Animal Health Strategy puts more weight on prevention

Therefore necessary to evaluate effect of omission of routine incisions on ability to identify animal disease

We divided according to production diseases/exotic diseases

Conclusion

Suggested changes to meat inspection had no effect on ability to identify disease

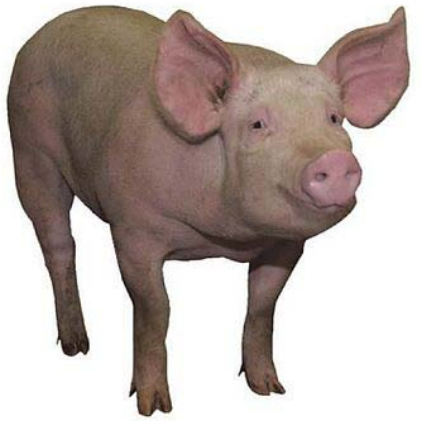
Mid-way conclusion

Omission of routine incisions into mandibular / mesenterial lymph nodes and heart do not seem to be associated with increased risk for human health

- And no effect on ability to identify exotic disease

Relevant for finisher pigs from integrated production systems, raised under controlled environment

- Indoor since weaning
- Food chain information exchanged prior to slaughter



Prerequisites

Animal health and zoosanitary status →	Denmark is official free of Bovine TB for more than 30 years
Origin of animals →	Born and raised in Denmark
Raising conditions →	Finisher pigs from integrated production systems, raised under controlled environment and kept Indoor since weaning
Food chain information →	

Food chain information

Audit of integrated production systems

Farm

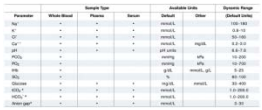
Code of practice

Zoonosis register

Slaughterhouse

CHR Register

Vet



VETSTAT

Ministry of Food, Agriculture and Fisheries
Danish Veterinary and Food Administration

Authorities

Communication and Trade

Risk communication

Risk assessment went through external review
- Comments from reviewers incorporated

Work presented and discussed with vets working at abattoirs

Trade issues

Denmark exports pork to >200 countries
- Some countries have requirements to meat inspection

Assessment and description of new meat inspection system presented to US Food Safety and Inspection Services in December 2008

Acceptance of equivalence granted on December 24, 2008

Supply Chain Meat inspection – The danish way

Sows, boars, and outdoor pigs will continue to go through traditional control

Full report:

http://www.lf.dk/Aktuelt/Publikationer/Svinekod.aspx

danish meat association

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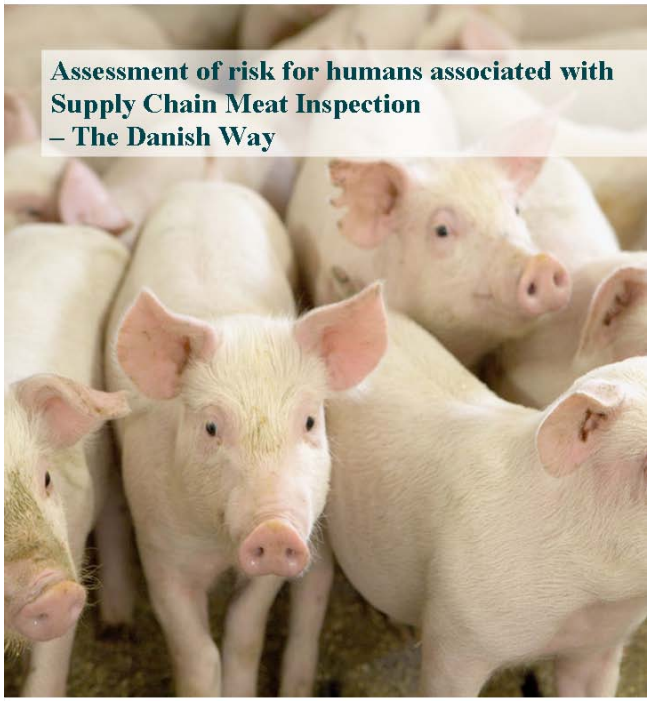

December 2008

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Summing up

Aim of meat inspection primarily food safety

But animal health and welfare also play a role

- Individual needs in MS of data describing animal health and welfare
- Important to prevent exotic livestock diseases
  - focus on ability to identify disease

Trade issues relevant for country like Denmark

- The customer is always right

Concept of controlled housing used in Denmark

Applies to majority of Danish pig herds

- Same definition when applied to *Trichinella*

Auditing in all herds every 3 years as part of Danish Standard

Perspectives

Most important hazard in pork is *Salmonella* - according to human EU statistics

=> Promote implementation of *Salmonella* risk–mitigating actions in EU

- Freedom of method preferred
- In Denmark, hot water decontamination in place for high-risk pigs
  => Low prevalence (1%)
  Alban & Sørensen, Fleischwirtschaft, 90 (9) p.109 -113

Proposal

Two kinds of surveillance, depending on level of infection in country/region

Relevant for *Trichinella*, bovine tuberculosis, *Cysticercus bovis*

Low intensity surveillance for free / very low countries

Aim: to continuously document absence of infection in population of interest

Higher intensity of surveillance for other countries

Aim: to take infected animals out of food chain and combat disease in herds

More work should be conducted into requirement to and effect of risk-based surveillance

Thank you for your attention

Co-author Birthe Steenberg is acknowledged for comments

Food chain information

Information

- Herd
  - *CHR-number*
  - *Address*
- Name of slaughterhouse
- Status of holding and health status of animals
- *Salmonella* status
- Information on indoor/outdoor
- Occurrence of diseases that may affect safety of meat
- Veterinary medicinal products or other treatments with withdrawal periods
- Name and address of veterinary practitioner

Where to find it?

Slaughterhouse database
– pig producers

- Danish QS
- Code of practice - contract between slaughterhouse and pig producer
- CHR register
- Zoonosis register
- VET-STAT
- Slaughterhouse
  – own check procedures