Trichinellosis in Poland 10 years overview and current situation

Ewa Biliska-Zając
National Veterinary Research Institute in Pulawy
ewa.bilska@piwet.pulawy.pl

---

**TRICHINELLOSIS IN PIGS**

- **200 million** of pigs examined in 10 years/prevalence 0.0001%

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of examined pigs</th>
<th>Number of infected pigs</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>20 900 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2006</td>
<td>23 500 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2007</td>
<td>25 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2008</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2009</td>
<td>17 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2010</td>
<td>28 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2011</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2012</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2013</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2014</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2015</td>
<td>20 000 000</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total: **> 1000000**

---

**TRICHINELLOSIS IN PIGS**

Structure of pigs production in Poland and comparison to other countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Mean number of pigs/ herd</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2010-2011</th>
<th>Change %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>261</td>
<td>256</td>
<td>+50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>254</td>
<td>254</td>
<td>+50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>907</td>
<td>2393</td>
<td>+159</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1225</td>
<td>560</td>
<td>+65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


- **T. spiralis** – 99%
- **T. britovi** – 1%

- Most of infected pigs were as a single cases
- Only several farm with infected pigs were recognized
- Trichinella outbreaks were found in small backyard farms (up to 100 animals in herd).
TRICHINELLOSIS IN PIGS

1. Example of farm with Trichinella infected pigs

2. Example of farm with Trichinella infected pigs

Important factors
- Forestry
- Corn cultivation
- Wetlands
- Number of wild boar population
- Number of red foxes population
- Garbage dumps
- Etc.
TRICHINELLOSIS IN WILD BOARS

- 1,400,000 of wild boars examined in 10 years; prevalence 0.39%

TRICHINELLOSIS IN HORSES AND COYPUS

- 400,000 examined horses;
  - Prevalence 0.0005%

- 13,670 examined coypus
TRICHINELLOSIS IN RED FOXES

- 3686 samples collected - 206 infected (5.6%)
  - Data combined from three Institutions

TRICHINELLOSIS IN OTHER – domestic cycle

- Domestic rats - 90 samples – 21 infected
  FarmA Mogilno – 59 rats – 17 infected by Trichinella spp.
  FarmB Wysokie Maz – 4 rats – 1 infected by Trichinella spp.
  FarmC Rynowo – 11 rats – 3 infected by Trichinella spp.
  The rest 16 rats were originated from single farms and were free of Trichinella larvae.

Larvae isolated from rats were identified as T.spiralis

- Breeding minks – 25 samples – no Trichinella infected
- Breeding foxes – 25 samples – no Trichinella infected

TRICHINELLOSIS IN OTHER – sylvatic cycle

- NVRI investigations:
  - Sylvatic rodents (mice): 150 samples – no infected animals
  - Raccoon dogs (4%):
    100 samples – 4 infected by T. spiralis
  - Beavers (2%):
    50 samples – 1 infected by T.spiralis

- Other Institutions investigations:
  - Red foxes infected up to 10% depend on regions
  - Raccoon dogs 24.4% infected
  - American minks 3.3% infected
Trichinellosis still danger for human?

- Source of infection? – untested meat products from wild boars
- Reservoir of Trichinella parasite in Poland are wildlife animals (5.6% red foxes, 0.39% wild boars, 4% raccoon dogs, 2% beavers, 3.3% american minks)
- Only 0.00004% of pigs (2015) were infected
- Rats! Source of Trichinella for pigs or rather victims???
- No cases of trichinellosis were detected in horses from 2011
- Two cases of T.britovi in pigs
- Increase of T.pseudospiralis infections in wild boars (difficulties in diagnosis by compressor method, and risk of introducing the larvae to pig farm)
- T.nativa in wild boar – widespread of the species into new area

Role of NRL?

- Trainings for veterinarians (every year > 200 vets trained)
- Proficiency Testing (for >400 accredited laboratories and >300 non accredited)
- Cooperation with Veterinary Inspection Service to recognize and eliminate source of infection for human and pigs
- MEAT INSPECTION – for the safety of consumers
- Increase of knowledge about trichinellosis in endemic area (meetings, conferences, seminars)
Thank you for attention!
Ewa Bilska-Zając

ewa.bilska@piwet.pulawy.pl