Trichinellosis in pigs: country perspective – preventing human infection through on-farm measures

SLOVAK REPUBLIC

STATE VETERINARY AND FOOD ADMINISTRATION OF THE SLOVAK REPUBLIC

http://www.svssr.sk/

Fridolín POKORNÝ, DVM et dipl. Ing.
Veterinary Officer
The occurrence of Trichinella in the world

- International trading, human and animal migration helps to their spreading to new regions, such as to new animal species. Therefore prevention and early diagnosis has great value.
- **The picture shows the extension of individual species Trichinella spp. in the world.**
The occurrence of Trichinella in the world

• Individual species differ from each other on the basis of some morphological differences and characteristics, such as reproductive isolation, infectivity for certain hosts and resistance to freezing.
SLOVAK REPUBLIC
SLOVAK REPUBLIC

area: 49 036 km²; population: 5 397 036
Competent authorities in the veterinary field

Established on the basis of Act No 39/2007 Coll. on veterinary care

- Ministry of Agriculture of the Slovak Republic – central competent authority
- State Veterinary and Food Administration of the Slovak Republic – national level
- 40 District Veterinary and Food Administrations – local level
Map of SR with local competent authorities – 40 District Veterinary and Food Administrations

Regionálne veterinárne a potravinové správy

1 - RVPS Bratislava mesto
2 - RVPS Senec
3 - RVPS Dunajská Streda
4 - RVPS Galanta
5 - RVPS Trnava
6 - RVPS Senica
7 - RVPS Komárno
8 - RVPS Nové Zámky
9 - RVPS Levíce
10 - RVPS Nitra
11 - RVPS Topoľčany
12 - RVPS Šála
13 - RVPS Nové Mesto/Váhom
14 - RVPS Trenčín
15 - RVPS Prievidza
16 - RVPS Púchov
17 - RVPS Žiar / Hronom
18 - RVPS Zvolen
19 - RVPS Velký Krtíš
20 - RVPS Lučenec
21 - RVPS Rimavská Sobota
22 - RVPS Banská Bystrica
23 - RVPS Martin
24 - RVPS Liptovský Mikuláš
25 - RVPS Žilina
26 - RVPS Čadca
27 - RVPS Dolný Kubín
28 - RVPS Rožňava
29 - RVPS Spišská Nová Ves
30 - RVPS Košice Mesto
31 - RVPS Košice okolie
32 - RVPS Trebišov
33 - RVPS Michalovce
34 - RVPS Poprad
35 - RVPS Stará Lubovňa
36 - RVPS Prešov
37 - RVPS Vranov / Topľou
38 - RVPS Bardejov
39 - RVPS Svidník
40 - RVPS Humenné
Slovak National Reference Laboratory for Parasites

- Slovak National Reference Laboratory for Parasites
  State Veterinary and Food Institute, Botanicka 15
  842 52 Bratislava, Slovak Republic
- NRL is accredited according to STN EN ISO/EC - standard 17025

Contact:
- MVDr. Beladicova, Mgr. Valentova
- MVDr. Alexandra Šlezárová;
- sekretariat@svuba.sk
Official laboratories for Trichinella testing

- **State Veterinary and Food Institute Bratislava**
- State Veterinary and Food Institute Dolný Kubín
- State Veterinary and Food Institute Košice
- State Veterinary Institute Zvolen
- 23 laboratories approved by SVFA in the slaughterhouses operated by DVFAs (Commission Regulation (EC) 702/2013)
Sampling of carcasses in slaughterhouses and method of testing

- Carcasses of domestic swine are systematically sampled in slaughterhouses as part of the post-mortem examination.
- A sample is collected from each carcass and the sample is examined for *Trichinella*.
- **Method of detection** – *reference method according to regulation (EC) No 2075/2005 = Magnetic stirrer method for pooled sample digestion*. 

Regional Seminar for OIE National Focal Points for Animal Production Food Safety
Testing of wild game susceptive to Trichinella

- Testing of wild game susceptive to Trichinella in the approved game handling establishments – as part of post mortem examination
- There is also obligation in the national legislation to test wild game or wild game meat susceptive to Trichinella – hunters who supply small quantities of wild game or wild game meat directly to the final consumer or to the local retail establishments directly supplying the final consumers.
Measures in case of the positive findings or single cases

Notification system in place

The official veterinarian shall notify without any delay each confirmed or suspect finding of Trichinella to the competent DVFA and SVFA (notifiable disease).

All positive carcasses and parts shall be judged as unfit for human consumption and removed as a byproduct of Category II.
Trichinella in private domestic pigs – home slaughtering

2012

- Number of home slaughtered pigs – 826
- Number of samples for testing – 113
- Number of positive tests – 0
# Trichinella sp. - Year 2012

<table>
<thead>
<tr>
<th>Animal</th>
<th>total</th>
<th>P.T</th>
<th>v %</th>
<th>T. spiralis</th>
<th>T.nativa</th>
<th>T.spp</th>
<th>T.britovi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pig</td>
<td>810.399</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pig - home slaughtering</td>
<td>113</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>horses</td>
<td>2</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wild boar</td>
<td>14 377</td>
<td>10</td>
<td>0,07%</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>fox</td>
<td>425</td>
<td>42</td>
<td>9,88%</td>
<td>8</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>badger</td>
<td>3</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raccoon dog</td>
<td>1</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bear</td>
<td>26</td>
<td>0</td>
<td>0,00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spolu</td>
<td>825 346</td>
<td>52</td>
<td>0,01%</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>42</td>
</tr>
</tbody>
</table>

* imported
Trichinella sp. - Year 2012

SLOVAK REPUBLIC

- 52 positive:
  - fox – 42 (9.88 %)
  - wild boar – 10 (0.07 %)

Maximum positivity – red foxes – main reservoir of trichinellosis

Species identification:  
- *Trichinella britovi* (fox - 35, wild boar – 7)  
- *Trichinella spp.* (fox – 7, wild boar – 1)  
- *Trichinella nativa* (2 – wild boar)
National evaluation of the recent situation, the trends and sources of infection

Endemic areas of trichinellosis occurrence are East and Central Slovakia. In 2012 trichinellosis occurred also in West Slovakia after long time.
Trichinella sp. - Year 2012

Positive findings:
Trichinella sp. - Year 2012

- 5 cases of human trichinellosis were reported in 2012
- Source of infection:
  - profesional exposition (forest workers, hunter)
  - all of them were consumers of raw meat
  - processed meat from domestic slaughters, domestic cutting and processing wild boar
Domestic pigs in SLOVAK REPUBLIC

• Trichinella infection is notifiable in the SR

• SVFA has knowledge of all domestic pigs: animal population – **502 356 animals** and **7651 establishments** – there is the system of official controls of identification and registration of pigs

• SVFA has the capability to assess epidemiological situation, detect the presence of Trichinella infection in domestic pigs
Contingency plan for trichinellosis (art. 7 of regulation (EC) No 2075/2005)

- National contingency plan
- 40 district contingency plans
Measures to prevent infection in pig farms

a) facilities and the surrounding environment should be managed to prevent exposure of pigs to rodents and wildlife (e.g. maintenance of buildings)

- controls of pig farms are carried out in the frame of animal health, e.g. controls of fulfilling the plan of diagnostic actions at 2 levels
  - controls by private veterinarians who have agreement with DVFA
  - controls by official vets (employees of DFVA)
- visit of farms by official vets (employees of DFVA) when the farm requests for registration
Measures to prevent infection in pig farms

b) raw food waste of animal origin should not be present at the farm level ➔ controls of prohibition of feeding of farmed animals with catering waste [art.11(1) (b) regulation (EC) No 1069/2009]
  o Within the frame of controls of feed safety
  o Within other veterinary controls – AW, identification and registration, AH, ABP, controls of residues of veterinary medicines

Frequency of controls (inspection) once in 5 years every registered pig farm
Scope of controls:
physical and documentation control of feed, records, commercial documents
Measures to prevent infection in pig farms

• Origin of feed – if feed has been obtained from a facility that produces feed in accordance with the principles in the regulation (EC) No 183/2005 within the official controls of feed safety

• Frequency:
  o Farms with more than 10 pigs - 30% of farms/year so every pig farm to be controlled min. once in 3 years;
  o From 3 - 10 pigs - once in 5 years

• Scope: registration or approval of feed producer, traceability, records of feed
Measures to prevent infection in pig farms

• Storage of feed (e.g. closed containers, impenetrable to rodents) within the official controls of feed safety

• Frequency:
  o Farms with more then 10 pigs - 30% of farms/year so every pig farm to be controlled min. once in 3 years;
  o from 3 - 10 pigs – once in 5 years
Measures to prevent infection in pig farms

- Dead animals must be collected, identified and transported without undue delay in accordance with Articles 21 (Collection and identification as regards category and transport) and 22 (traceability) of regulation EP and Council (EC) No 1069/2009 and with Annex VIII (COLLECTION, TRANSPORT AND TRACEABILITY) to Commission regulation (EU) No 142/2011

- Frequency of controls:
  - 1x5 years
  - or according to the risk analysis (e.g. number of animals, amount of ABP – number of dead animals in the past 3 years, other information on non-compliance

- Dead pigs are category 2 material

- Scope of controls:
  dead animals, storage, identification of containers, commercial documents, records, disposal
Example - Data from annual report of official controls 2012 of ABP – all ABP controls

- Number of controls within all ABP controls – **7739**
- Number of controls with shortcomings - **159**
- Number of shortcomings - **217**
- Number of sanctions - **28**
- Number of imposed measures – **66**
- Type of main shortcomings:
  - Missing facilities for ABP storage
  - Damaged containers
  - Insufficient hygienic conditions of facilities and containers for ABP
  - Missing records of cleaning and disinfection
  - Containers were not labeled
  - Missing records on the production and disposal of ABP
  - Dead animals were not disposed in time and in safe way
  - Problems with maintenance – storage of ABP
Cooperation with other competent authorities

Act No 39/2007 Coll.

- article 16 (5): In the case of serious danger to public health, veterinary administration authorities inform the competent public health authorities and act in cooperation with them.

- There is also agreement between SVFA and Public Health Authority (PHA) on the national level and also on the local level (DVFA and RPHA).

- PHA sends to the SVFA report on the epidemiological situation in the SR weekly.
Report on zoonosis in the Slovak Republic 2011 and 2012

- Includes data on trichinellosis in humans and animals
4. International conference on zoonoses

• In the Slovak Republic periodically we organize professional conferences focused on zoonoses.
• **BRATISLAVA 16. – 18. October 2013**
Publication of the results of official controls in **Slovak Republic**

- Annual report on the activities SVFA, which is prepared for each calendar year.
- Publication of Annual Report on the activities SVFA are on the website SVFA.
- [http://www.svps.sk/](http://www.svps.sk/)
Working with farmers unions, hunters

- Training and analyzes the shortcomings of official controls.
- Analysis of the situation in other countries.
- Information on current legislation.
- Professional journal articles.
- Periodic training of inspectors District Veterinary and Food Administrations
Examined: 1.592 animals:
- dog – 853
- cat – 292
- fox – 425
- wolf – 1
- lynx – 1
- raccoon dog – 2
- leopard – 2
- carnivores from Zoo - 18

69 positive - foxes

Species identification: Echinococcus multilocularis
Echinococcus sp. - Year 2012

Positive findings – foxes and human cases:
Echinococcus sp. - Year 2012

- In the year 2012 in Slovakia were three cases positive to the human population
- 2 cases Echinococcus granulossus
- 1 case Echinococcus multilocularis – 7 year old boy.
- we don’t have any other data from human Department of Parazitology
Information for the public on the website SVFA

Regional Seminar for OIE National
● Focal Points for Animal Production
Food Safety

16.10.2013
Information for the public on the website SVFA on OIE activities and legislation
Information for the public on the website Ministry of Agriculture and Rural Development of the Slovak Republic
Thank you for your attention

e-mail: pokorny@svps.sk
http://www.svssr.sk/

riaditel@svuba.sk
beladicova@svuba.sk
http://www.svuba.sk/