Information on the Aujeszky’s Disease Situation

SCoFCAH, Brussels, 1 - 2 June 2010
Slovenia requested to be recognised as free from Aujeszky’s disease under Article 10 of Council Directive 64/432/EEC

- AD is compulsorily notifiable disease in the whole country.
- All clinical cases suggestive for AD have to be subjected to field and laboratory investigations.
- Vaccination against AD has been prohibited.
- Infection is not known to be established in feral pigs and measures have been implemented to prevent any transmission of possible diseases in feral pigs to domestic pigs.
- AD has never been reported in Slovenia and serological surveys with negative results have been conducted on a representative sample of all pig holdings.
- Pigs are identified and all movements recorded in accordance with Community legislation.
Slovenian national control program for AD

- Epidemiological situation in the country
- Historical data on the epidemiological evolution of the disease and the programme of systematic monitoring of contagious animal diseases
  - Details on monitoring program
    - Monitoring program 1987 - 2004
    - Monitoring program 2005 - 2010
  - Details on sero-positive cases in 1995 - 1999
- National reference laboratory
- System of notification of suspected or confirmed presence of the disease
- Measures at a suspected or confirmed presence of the disease
- Compensations
Epidemiological situation in the country

Pig population

- Total no. of pig holdings (Data from the CRP, 31. 12. 2009)
  - 21,952
Epidemiological situation in the country

Pig population

- Total no. of pigs (Data from the CRP, 31. 12. 2009)
  - 353,170
Epidemiological situation in the country

Pig population

- 5 large pig units
  - 800 - 5,500 sows per unit
  - more than half of Slovene pig production
Epidemiological situation in the country

Pig population

Structure of pig holdings (No. of pigs)

<table>
<thead>
<tr>
<th>SLOVENIJA</th>
<th>1-2 pigs</th>
<th>3-4 pigs</th>
<th>5-9 pigs</th>
<th>10-19 pigs</th>
<th>20-49 pigs</th>
<th>50-99 pigs</th>
<th>100-199 pigs</th>
<th>200-399 pigs</th>
<th>400-499 pigs</th>
<th>500 and more pigs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.230</td>
<td>5.959</td>
<td>4.112</td>
<td>1.728</td>
<td>1.042</td>
<td>373</td>
<td>296</td>
<td>137</td>
<td>23</td>
<td>49</td>
</tr>
</tbody>
</table>

Structure of pig holdings (Category of pigs)

<table>
<thead>
<tr>
<th>SLOVENIJA</th>
<th>Breeding animals – breeding sows</th>
<th>Breeding animals – sows mated for the first time</th>
<th>Fattening pigs (50 - 110 kg)</th>
<th>Fattening pigs (80 - 110 kg)</th>
<th>Fattening pigs (more than 110 kg)</th>
<th>Fattening pigs (80 – 110 kg)</th>
<th>Fattening pigs (50 – 80 kg)</th>
<th>Young pigs (20 - 50 kg)</th>
<th>Suckling pigs (up to 20 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.523</td>
<td>829</td>
<td>6.124</td>
<td>5.936</td>
<td>7.692</td>
<td>8.558</td>
<td>2.523</td>
<td>8.558</td>
<td>2.523</td>
</tr>
</tbody>
</table>

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Epidemiological situation in the country

AD situation in Slovenia

- AD has never been reported in Slovenia
- Compulsorily notifiable disease - since 1977
- Vaccination against AD has never been performed and has been forbidden

- AD surveillance system:
  - passive surveillance
    - based on mandatory reporting and notification of clinical suspicions of AD in domestic pigs and wild boar population
  - active surveillance (monitoring) in domestic pig population
    - based on random sampling, combined with risk approach
  - active surveillance (monitoring) in wild boar population
    - based on random sampling, combined with risk approach

- Full compensation in case of an outbreak and for elimination of serological reactors
Historical data on the evolution of the disease and the program of systematic monitoring

**History**

- disease has never clinically appeared in Slovenia
- compulsorily notifiable
  - under the Law on protection of animals against contagious diseases (OJ SRS, 18/77)
- special provisions in relation to AD also for AI centers and breeding herds
  - Rules on contagious diseases by which AI centres, breeding herds and flocks, hatcheries and fish farms shall not be infected (OJ SRS, 3/78)
  - Rules on the measures for suppression of contagious diseases of animals (OJ SRS, 3/78)
- systematic monitoring program (routine testing) for AD has started in 1987
  - Rules on carrying out of systematic monitoring of contagious animal diseases and vaccinations (for each year)
Historical data on the evolution of the disease and the program of systematic monitoring

Details on monitoring programs 1987 - 2004

- **1987**
  - 5% of pigs in breeding herds of large pig units

- **1988 - 1993**
  - 10% of breeding pigs in all herds

- **1994**
  - 5% of breeding pigs in all herds

- **1995 - 1996**
  - all boars, breeding sows by the pattern

- **1997 - 1999**
  - all boars (in administrative units on the border with Croatia - twice per year),
    all breeding sows in breeding centres and 100 breeding sows from large pig units

- **2000 - 2003**
  - all boars, all breeding sows in breeding centres and 100 breeding sows from large pig units

- **2004**
  - all boars, 100 breeding sows from large pig units, 20% breeding sows from all other pig holdings (at least 1 sample per holding), sampling in wild boar population (406 random + additional app. 400 samples)
**Historical data on the evolution of the disease and the program of systematic monitoring**

### Serological investigations for AD (1987 – 2004)

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of animals tested</th>
<th>No. of positive animals</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>1.101</td>
<td>0</td>
<td>SN</td>
</tr>
<tr>
<td>1988</td>
<td>2.477</td>
<td>0</td>
<td>SN</td>
</tr>
<tr>
<td>1989</td>
<td>2.546</td>
<td>0</td>
<td>SN</td>
</tr>
<tr>
<td>1990</td>
<td>2.007</td>
<td>0</td>
<td>SN</td>
</tr>
<tr>
<td>1991</td>
<td>1.539</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1992</td>
<td>1.577</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1993</td>
<td>1.695</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1994</td>
<td>1.752</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1995</td>
<td>7.923</td>
<td>19 (15 + 4)</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1996</td>
<td>11.560</td>
<td>394</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1997</td>
<td>4.066</td>
<td>17</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1998</td>
<td>3.694</td>
<td>20</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>1999</td>
<td>4.385</td>
<td>7</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2000</td>
<td>3.003</td>
<td>3</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2001</td>
<td>2.126</td>
<td>4</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2002</td>
<td>2.718</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2003</td>
<td>2.948</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2004</td>
<td>5.696</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
</tbody>
</table>
Historical data on the evolution of the disease and the program of systematic monitoring

Details on monitoring programs 2005 - 2010

- **2005**
  - a large scale monitoring program was put in place in order to support the statement of disease freedom
  - samples were taken from all holdings with breeding animals or with more than 10 fattening pigs
  - two sampling schemes
    - large pig units: 15 samples from fattening pigs and 25 blood samples from breeding sows - each quarter; samples taken at slaughterhouse;
    - other holdings: fattening pigs and breeding sows - by pattern, all boars; all samples taken at holdings;
    - sampling in wild boar population
Historical data on the evolution of the disease and the program of systematic monitoring

<table>
<thead>
<tr>
<th>Number of fattening pigs on the holding</th>
<th>Number of samples to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-20 pigs</td>
<td>10 samples</td>
</tr>
<tr>
<td>21-30 pigs</td>
<td>11 samples</td>
</tr>
<tr>
<td>31-60 pigs</td>
<td>12 samples</td>
</tr>
<tr>
<td>61-200 pigs</td>
<td>13 samples</td>
</tr>
<tr>
<td>201 and more</td>
<td>14 samples</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of breeding sows on the holding</th>
<th>Number of samples to be taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 -19 sows</td>
<td>all</td>
</tr>
<tr>
<td>20 - 25 sows</td>
<td>20 samples</td>
</tr>
<tr>
<td>26 - 100 sows</td>
<td>25 samples</td>
</tr>
<tr>
<td>101 and more</td>
<td>30 samples</td>
</tr>
</tbody>
</table>

- In 2005, 6,777 holdings were sampled
- 46,079 animals tested
- AD was not detected
Historical data on the evolution of the disease and the program of systematic monitoring

Details on monitoring programs 2005 - 2010

2006

- sampling scheme for large pig units remained the same
- other holdings
  - a herd based sampling scheme was implemented for detection of 0.2% seroprevalence with 95% confidence limit in all pig farms (1,497 farms randomly selected from CRP)
  - number of samples taken at each holding allowed for the detection of 5% prevalence with 95% confidence
  - the emphasis was put on breeding animals
  - all boars
  - sampling in wild boar population
Historical data on the evolution of the disease and the program of systematic monitoring

Aujeszky's disease monitoring program 2006

Legenda
- AD monitoring 2006: 1,467 farms
- AD monitoring 2006: 8 large pig units
- RO VARS

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Historical data on the evolution of the disease and the program of systematic monitoring

Details on monitoring programs 2005 - 2010

- 2007 - 2009
  - sampling scheme for large pig units remained the same
  - other holdings
    - sampling scheme was slightly changed to detect a 1% level of sero-positive herds with 95% confidence limit (149 herds)
    - number of samples taken at each holding allowed for the detection of 5% prevalence with 95% confidence
    - all boars
    - sampling in wild boar population: random sampling (406), risk based (additional as much as possible along the border), all wild boars found dead or from road-kills have to be tested on AD
Historical data on the evolution of the disease and the program of systematic monitoring

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of holdings tested</th>
<th>No. of animals tested</th>
<th>No. of positive animals</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>6.777</td>
<td>46.079</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2006</td>
<td>1.505</td>
<td>6.784</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2007</td>
<td>1.027</td>
<td>2.676</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2008</td>
<td>1.027</td>
<td>4.335</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
<tr>
<td>2009</td>
<td>700</td>
<td>3.035</td>
<td>0</td>
<td>ELISA + SN</td>
</tr>
</tbody>
</table>
Historical data on the evolution of the disease and the program of systematic monitoring
Historical data on the evolution of the disease and the program of systematic monitoring

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated wild boar population</th>
<th>No. of animals tested (hunting bag)</th>
<th>No. of serologically positive animals</th>
<th>No. of animals tested - virus isolation (found dead, road-kills)</th>
<th>No. of virus positive animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>6.264</td>
<td>698</td>
<td>115</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>9.132</td>
<td>749</td>
<td>175</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>2009</td>
<td>6.114</td>
<td>672</td>
<td>115</td>
<td>18</td>
<td>0</td>
</tr>
</tbody>
</table>
Historical data on the evolution of the disease and the program of systematic monitoring
Historical data on the evolution of the disease and the program of systematic monitoring

Details on monitoring programs 2005 - 2010

- **2010**
  - sampling scheme for large pig units remained the same
  - other holdings
    - sampling scheme was determined in accordance with the “Guidance to Commission Decision 2008/185/EC (working document)
    - a herd based sampling scheme detecting a 0.2 % sero-positive herds with 95% confidence (1,497 farms randomly selected from CRP) combined with risk approach
    - with in herd testing allows for detection of 20% (10%) prevalence with 95% confidence in herds with breeding animals (herds with only fattening animals)
    - all boars
    - sampling in wild boar population: random sampling (406), risk based (additional as much as possible along the border), all wild boars found dead or from road-kills have to be tested on AD
Historical data on the evolution of the disease and the program of systematic monitoring

Details on positive serological reactors in 1995 - 1999

- **1995**
  - sero-positive cases were detected in two large pig units
    - Pristava - 15, Stična - 4
  - due to the vaccination with bivalent vaccine (CSF-AD)
  - positives were culled
Historical data on the evolution of the disease and the program of systematic monitoring

- 1996
  - one boar detected positive in the frame of systematic monitoring
  - epidemiological investigation: boar from a small holding with 6 pigs (1 boar, 2 sows, 3 fatteners) and a dog; no clinical signs
  - holding was put under restrictions - ban on movements, testing of all pigs
  - both sows were positive as well
  - measures on the holding
    - culling of positive animals
    - two consecutive serological tests after culling of positives, with negative results to lift up the measures
  - measures for other holdings in the area
    - it was assumed that disease was spread with natural mating ⇒ all sows that were in contact with positive bioar since July 1995 had to be tested
    - all in-contact sows were positive
Historical data on the evolution of the disease and the program of systematic monitoring

- **NDCC measures**
  - ban on movement of all pigs; positive animals were culled and compensations were paid to farmers
  - ban on issuing of health certifiactes
  - census of all pig holdings in AU Brežice
  - identification of pigs and categorisation of herds
  - serological testing of all breeding pigs in AUs Brežice and Krško
  - culling of all sero positive reactors and animals that were in contact with them
  - ban on mating of pigs
  - mandatory AI; paid by AUs
  - disease awareness campaign and education of farmers
Historical data on the evolution of the disease and the program of systematic monitoring

<table>
<thead>
<tr>
<th>Month</th>
<th>No. of tested</th>
<th>No. of positive holdings</th>
<th>No. of positive animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>6</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>February</td>
<td>98</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>March</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>April</td>
<td>129</td>
<td>16</td>
<td>45</td>
</tr>
<tr>
<td>May</td>
<td>1366</td>
<td>73</td>
<td>157</td>
</tr>
<tr>
<td>June</td>
<td>162</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>July</td>
<td>729</td>
<td>31</td>
<td>62</td>
</tr>
<tr>
<td>August</td>
<td>692</td>
<td>23</td>
<td>65</td>
</tr>
<tr>
<td>September</td>
<td>274</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>October</td>
<td>82</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>November</td>
<td>68</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>December</td>
<td>60</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>3669</td>
<td>187</td>
<td>410</td>
</tr>
</tbody>
</table>
Historical data on the evolution of the disease and the program of systematic monitoring

**Structure of animals in positive holdings**

<table>
<thead>
<tr>
<th>Holding</th>
<th>Brežice</th>
<th>Krško</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 5 breeding animals</td>
<td>75</td>
<td>41</td>
</tr>
<tr>
<td>5 to 10 breeding animals</td>
<td>38</td>
<td>9</td>
</tr>
<tr>
<td>more than 10 breeding animals</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>128</strong></td>
<td><strong>59</strong></td>
</tr>
</tbody>
</table>

- **lifting of measures**
  - after elimination of positive animals and in-contact animals two consecutive serological tests with negative results had to be performed in an interval of at least 4 months and cleaning and disinfection ⇒ all measures were lifted with the exception of AI
  - MAFF financed repopulation (only with animals from disease free farms, only AI was allowed)
  - increase of AD monitoring
Historical data on the evolution of the disease and the program of systematic monitoring

- **1997**
  - Clinical suspicion on a farm (1 boar, 20 sows)
    - A sow showed clinical signs of diseased CNS
    - No reproduction disorders were observed
    - Animals were tested
    - All were negative
  - Sero-positive boar in regular monitoring
    - No clinical signs observed
    - Boar was culled
    - All other breeding animals (35 sows) were tested
    - All were negative

- **1999**
  - Seven positive animals at import quarantine
    - Additional documentation requested proving that animals in question were vaccinated
    - All positives were culled

- **Following years**
  - A few sero positive cases detected, defined as singleton reactors
  - In each case an epidemiological inquiry was conducted and the holding was put under restrictions
Approved laboratory for AD testing is National Veterinary Institute, Gerbiceva 60, Ljubljana
  - It meets the conditions laid down in Annex III of Commission Decision 2008/185/EC regarding serological tests for AD

Testing of pig serum samples
  - ELISA test for detecting antibodies to glycoprotein B (commercial ELISA test SVANOVIRTM PRV-gB-Ab, Sweden)
  - Three national sera (national positive, negative and doubtful sera) are included on each plate
  - ELISA test is accredited within standard EN ISO/IEC 17025:2005

In case of a positive ELISA test result, serum neutralisation test (SN) is performed to the whole AD virus according to the OIE diagnostic manual

Wild boars found dead or from road-kills are tested in virus isolation test

The laboratory also participates two times per year in serology proficiency testing organised by QA unit of Veterinary Laboratories Agency, United Kingdom; all samples were correctly interpreted as positive or negative
System of notification of suspected or confirmed presence of the disease

- Veterinary Compliance Criteria Act (Ur. l. RS, No 93/05)
  - provides a general classification of the contagious animal diseases, in relation to which the general and specific preventive measures need to be implemented
  - Article 17, point 1
    - In the case of an outbreak of contagious animal disease or when signs of disease have been established, constituting reasonable doubt that an animal has taken ill with or died of a contagious disease, the owner of the animal in question must immediately and in the prescribed way notify thereof the veterinary organisation

- Rules on animal diseases (Ur. l. RS, No 81/07, 24/10)
  - Detailed classification of animal diseases
  - AD is classified among the compulsorily notifiable animal diseases
  - In case of a suspected presence of AD, the relevant veterinary organisation must immediately notify VARS HQ
  - The authorised laboratory must immediately by phone, and by fax on the envisaged form, or via e-mail notify the VARS HQ of the diagnostic investigation results
Measures at a suspected or confirmed presence of a disease

- Rules on measures for detection, suppression and eradication of AD (OJ 91/05, 13/06)
  - Measures at suspected presence of AD
    - Holding in question is put under restrictions
    - blocking up the farmyard,
    - epizootiological investigation,
    - banning the trade in and movements of pigs from and to the holding,
    - installation of disinfection barriers
  - Measures at suspected presence of AD
    - banning the trade,
    - serological investigations of all porcine animals at the infected holding,
    - slaughtering all serologically positive pigs at the infected holding,
    - immediate harmless disposal of dead animals,
    - harmless disposal of waste,
    - implementation of DDD measures
Measures at a suspected or confirmed presence of a disease

- Rules on measures for detection, suppression and eradication of AD (OJ 91/05, 13/06)
  - Cessation of disease
    - It shall be considered that the disease has ceased, when the longest incubation period (30 days) has elapsed, no clinical signs were observed in the herd and after all the prescribed measures and cleaning and disinfection have been implemented
    - measures are lifted after:
      - 2 laboratory tests of all breeding sows and all boars with negative results in an interval of at least 4 weeks have been performed and
      - 2 laboratory tests of other pigs in the holding with negative results in an interval of at least 4 weeks, so as to detect the disease at 2% prevalence with 95% confidence have been performed
Compensations

- **Veterinary Practice Act (OJ RS, No 33/01, 45/04, 62/04, Odl.US.U-I-141/01-17 and 93/05)**
  - the Republic of Slovenia shall provide a compensation to the owner of animals that have been killed or slaughtered, and for objects and raw materials that have been damaged, ruined or destroyed in carrying out the measures ordered for the suppression of certain diseases
    - former List A OIE
    - Diseases determined in the Rules on the compensations on the veterinary field (Ur. l. RS, No 105/2007)
      - Aujeszky's disease is included in these Rules
      - The owner of the animals is entitled to compensation when the outbreak of a contagious disease or suspected contagious disease has immediately been reported, when the compulsory preventive diagnostic and other examinations of animals in the prescribed intervals have been implemented and when other prescribed and ordered measures for the prevention and suppression of disease have been implemented
Conclusions

- Slovenia fulfills the criteria to be considered free from AD (in accordance with the Guidance to Commission Decision 2008/185/EC)
  - no vaccination against the disease has been carried out or vaccination against AD has been banned for all domestic pigs for at least 1 year
  - infection is not known to be established in feral pigs, or measures have been implemented to prevent any transmission of the AD virus from feral pigs to domestic pigs
  - AD has never been reported in the Member State or region, serological surveys, with negative results, have been conducted on a representative sample of all pig holdings no more than 3 years prior to qualification;
  - the serological surveys should be directed at the detection of antibodies against the whole virus, and based on the breeding pig population and, for holdings that contain no breeding pigs, on a comparable number of fattening pigs