Implementation of Bovine tuberculosis eradication program in Portugal 2011

Brussels, SCOFCAH, 10, 11 September 2012
Intervenients

**DGAV**
Coordination and control of the implementation of the eradication programme

**OPP/Private Vets**
Technical implementation of the program
Tuberculin test
Surveillance at farm level
Information and support to farmers

**LABS**
Gama interferon test
Bacteriology

**DGAV/Official Meat Inspectors**
Surveillance in slaughterhouses
Objective: Control / Eradication of bovine tuberculosis

2011: Reinforcement of control measures

Critical points identified:

- Extensive production systems with large herds (southern regions)
- Increased number of game dears and wild boards in last years
- Frequent contacts between bovine and wild game animals
- Epidemiological investigation
- Training
www.dgv.min-agricultura.pt/, saúde animal, programas de controlo e de erradicação e vigilância das doenças dos animais
### Bovine Tuberculosis Eradication Programme Population characterization in 2011

<table>
<thead>
<tr>
<th>Regions</th>
<th>Number of herds</th>
<th>Number of animals</th>
<th>Average number of animals per holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>21,092</td>
<td>326,723</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>8,162</td>
<td>149,416</td>
<td>18</td>
</tr>
<tr>
<td>LVT</td>
<td>1,224</td>
<td>101,841</td>
<td>83</td>
</tr>
<tr>
<td>ALT</td>
<td>4,259</td>
<td>621,238</td>
<td>145</td>
</tr>
<tr>
<td>ALG</td>
<td>330</td>
<td>7,398</td>
<td>22</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35,067</td>
<td>1,206,616</td>
<td>34</td>
</tr>
</tbody>
</table>
Over population of large game animals in some areas is one of the identified critical points.
GUÍA DE BOAS PRÁTICAS
HIGIO - SANITÁRIAS
- Caça Maior -
TUBERCULOSE EM CAÇA MAIOR

29 de ABRIL 2011
Definition of risk area

Área epidemiológica de Risco para a TUBERCULOSE dos Animais de CAÇA MAIOR

<table>
<thead>
<tr>
<th>DSVR</th>
<th>Concelho</th>
<th>Freguesias</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Casteio Branco</td>
<td>Malpica do Tejo / Monforte da Bera</td>
</tr>
<tr>
<td></td>
<td>Idanha-a-Nova</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Penamacor</td>
<td>Águas/ Ald Bisp/ Ald. João Pires/ Aranhas/ Bemposta/ Pedrogão S. Pedro/ Penamacor/ Salvador</td>
</tr>
<tr>
<td></td>
<td>Vila Velha de Ródão</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Alandroal</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Arronches</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Barrancos</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Campo Maior</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Casteio de Vide</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Crato</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Elvas</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Marvão</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Moura</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Mourão</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Nisa</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Portalegre</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Reguengos de Monsaraz</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Serpa</td>
<td>todas</td>
</tr>
<tr>
<td></td>
<td>Vila Viçosa</td>
<td>todas</td>
</tr>
</tbody>
</table>
• Presence of veterinary in all large game hunting activities in the defined area

• Initial exam of all killed animals, done by vet to reinforce the security of game meat and ensure protection of hunters and people involved in the operations

• Ensure the correct disposal of by-products

• Collection of data to improve evaluation, risk assessment and support decision
**Hunting season**
**Oct 2011 - Mar 2012**

<table>
<thead>
<tr>
<th></th>
<th>Number of hunted animals</th>
<th>Histopatology</th>
<th>Bacteriology</th>
<th>% M. bovis infection in animals with lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tipical Lesions</td>
<td>Other lesions</td>
<td>Micobacterium avium</td>
</tr>
<tr>
<td>Dear</td>
<td>2330</td>
<td>90</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Wild board</td>
<td>1880</td>
<td>104</td>
<td>49</td>
<td>14</td>
</tr>
</tbody>
</table>

Bovine are the main reservoir for the species, but over population of large game animals, in some areas, have a role in the transmission of the disease, acting as a reservoir for domestic animals.
Bovine tuberculosis eradication programme
number of positive herds / number of positive animals
2003 – 2011
Bovine tuberculosis eradication programme
% positive herds / % positive animals
2003 - 2011
# Bovine Tuberculosis

## Herd prevalence and Herd incidence 2010-2011

<table>
<thead>
<tr>
<th></th>
<th>Nº positive herds</th>
<th>Nº new positive herds</th>
<th>Prevalence (% positive herds)</th>
<th>Incidence (% new positive herds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSVR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>75</td>
<td>62</td>
<td>63</td>
<td>55</td>
</tr>
<tr>
<td>C</td>
<td>45</td>
<td>46</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>LVT</td>
<td>6</td>
<td>9</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>ALT</td>
<td>185</td>
<td>141</td>
<td>145</td>
<td>92</td>
</tr>
<tr>
<td>ALG</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>312</td>
<td>258</td>
<td>254</td>
<td>189</td>
</tr>
</tbody>
</table>
Compared tuberculin test (IDT)
Complementary diagnostic tests

• **Gamma-interferon test**
  – Allows detection of initial infection in exposed animals
  – Used in cases of infected herds as a supplementary test to IDT
  – Used in bovine with doubtful result to IDT in herds not officially free of bovine tuberculosis

  **All positive animals either to IDT or to gamma-interferon are slaughtered**

• **Histopatologic and bacteriologic tests**
  – Used in post mortem sampling, in order to isolate *Mycobacterium* and confirm infection
Used in infected holdings (T2.1) with positive compared IDT (as an alternative to gamma-interferon test)

If reaction to bovine tuberculin ≥ 4 mm

(independently of reaction to avian tuberculin),

Animal considered **positive** and slaughtered.

Allows faster recovery of the status of the herd
**T2.1 HERD**

At least one bovine tested positive to compared IDT

- **BOVINE(S) WITH POSITIVE RESULT TO COMPARED IDT**
- **BOVINE(S) WITH DOUBTFULL RESULT TO COMPARED IDT**
- **BOVINE(S) REACTOR TO BOVINE TUBERCULIN \( \geq 4 \text{ mm} \)**
Regular visits (once a year) to officially free herds (T3)

Increment the frequency of testing in:

- Infected herds
- Herds in contact with infected herds
- Herds epidemiologically related to infected herds
- Herds in risk areas

Focus on complying with the retesting sequence in order to confirm the absence of the disease and requalify the infected herds
Control measures

Bovine age for the compared tuberculin test (IDT) in officially free herds (T3) in 2011

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Totais</td>
<td>12.1</td>
<td>%</td>
</tr>
<tr>
<td>DSVRN</td>
<td>21916</td>
<td>18</td>
<td>0,08%</td>
</tr>
<tr>
<td>DSVRC</td>
<td>8045</td>
<td>12</td>
<td>0,15%</td>
</tr>
<tr>
<td>DSVRLVT</td>
<td>1359</td>
<td>2</td>
<td>0,15%</td>
</tr>
</tbody>
</table>
| DSVRAlt DIV Alcácer do Sal | 913   | 3    | 0,33% | 963     | 8    | 0,52% | 6s
| DSVRAlt DIV Beja      | 1015   | 13   | 1,28% | 1094    | 41   | 3,75% | 6s        |
| DSVRAlt DIV Elvas     | 558    | 7    | 1,25% | 616     | 5    | 0,81% | 6s        |
| DSVRAlt DIV Évora     | 1097   | 12   | 1,09% | 1279    | 17   | 1,33% | 6s        |
| DSVRAlt DIV Portalegre| 702    | 9    | 1,28% | 770     | 32   | 4,16% | 6s        |
| DSVRAng DIV Faro      | 352    | 0    | 0,00% | 351     | 0    | 0,00% | 24m        |
% Causes of infection (2010):

- Direct contact with other holdings (15%)
- Direct contact with game animals (19%)
- Introduction of animals (26%)
- Detection trough pre-movement tests (6%)
- Contact with comum equipments (2%)
- Reinfection (7%)
- Other origins (44%)

T=254
Compulsory pre-movement testing in order to avoid the entrance of infected bovine in T3 herds.

<table>
<thead>
<tr>
<th>year</th>
<th>herds</th>
<th>animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>2.291</td>
<td>25.153</td>
</tr>
<tr>
<td>2007</td>
<td>3.876</td>
<td>28.491</td>
</tr>
<tr>
<td>2008</td>
<td>3.806</td>
<td>35.446</td>
</tr>
<tr>
<td>2009</td>
<td>9.375</td>
<td>60.713</td>
</tr>
<tr>
<td>2010</td>
<td>9.251</td>
<td>70.176</td>
</tr>
<tr>
<td>2011</td>
<td>16.875</td>
<td>97.299</td>
</tr>
</tbody>
</table>
## Training sessions

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of sessions</th>
<th>Number of vets present</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>10</td>
<td>401</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>150</td>
</tr>
</tbody>
</table>

Total number of vets working in OPP: 485
Eradication strategy

- Implementing rigorous method of performance and validation of the compared IDT test (Clinical act)
- Reinforcement of follow-up tests:
  - infected herds,
  - contact herds and
  - epidemiologically related herds
- Reinforcement of epidemiological evaluation
- Training of Sanitary Inspectors (notifiable diseases) and IDT executor vets
- Stamping out policy of positive herds in specific regions
- Reinforcement of surveillance for large game animals
Main Objectives

- Tuberculosis eradication
- Recognition of the Azores Autonomous Region and part of the mainland as officially free regions for bovine tuberculosis
Thank you for your attention