Surveillance in Turkish Thrace
&
FMD Situation in Anatolia

87th Session of the EuFMD Executive Committee
2-3rd April 2014, Brussels, Belgium
Dr Veli Gülyaz
Director FMD Institute, Turkey
Fuat Özyörük
Head NRL of FMD Institute, Turkey
Importance of Turkish Thrace

• Turkish Thrace is an important barrier keeping FMD away from Europe.
• The buffer zone was established in 1962-1965 to protect Greece and Bulgaria from SAT-1 and A22 pandemics.
• Since that time, Turkey’s FMD control policy has included a vaccination program targeting circulating serotypes and subtypes.
• Vaccines needed for Thrace have been mostly supplied by European and UN Institutions since 1960s to the present day.
• Despite these efforts, FMD outbreaks in Euraisa spread to Greece and Bulgaria in 1991, 1993, 1994, 1996, 2001 and 2011 but were rapidly controlled.
• The last series of FMD outbreaks happened in 2007.
• **Turkish Thrace has been a FMD free zone where vaccination is practised since 2010.**
• Since that time, Turkey’s FMD control policy has improved by legislations and surveillance activities.
Since 1962 Europe has been threatened with invasion by African and Near-Eastern forms of FMD. None of the continent’s 375 million cattle, pigs, buffaloes, sheep and goats has immunity to these non-European forms of the dreaded disease and should either break through it would cost millions of livestock losses. So far these invading forms checked in buffer zones set up in Thrace by the Food and Agriculture Organizations and Bulgarian, Greek, Turkish governments. But the danger of a breakthrough is still there and fight goes on.

In the villages of Turkish Thrace animals outnumber people by as much as five to one. If you are in the spring when teams come from the provincial capitals along the Bulgarian, Greek and Turkish border to cattle, sheep, and goats you can see them all.

FAO Photo P. Johnson
Legislation for Thrace

• FMD control measures in Turkish Thrace are very different from those which operate in Anatolia as outlined below:
  • Fully compliant legislation with 2003/85/EC
  • Vaccination policy and coverage
  • Tri-valent vaccine (European origin)
  • Animal movements to Thrace (article 8.5.14 )
  • Control points established between Thrace and Anatolia
Legislation for Thrace
feast of sacrifice

• Movement of large ruminants or small ruminants from Thrace (Edirne, Kırklareli, Tekirdağ, Çanakkale) to Istanbul is only permissible in one direction, in order to prevent possible contact with infected animals and then future carriage of the disease, this is of particular importance for markets that are established to provide animals for sacrifice during feasts.
Legislation for Thrace before feast of sacrifice

TCAH of OIE Article 8.6.14. applied

- Nominee Animals are identified 6 months before the festival
- Active clinical surveillance applied by regular visits
- One month quarantine applied in their own location individually
- NSP testing was carried out and interpretation of results and decision made by based on population principle; if one animal was detected as sero-positive of antibody to NSPs of FMDV, whole population under the application was rejected for movement.
- Allowed only two weeks before to specific temporary animal markets arranged in Istanbul.
- Not allowed movement to other place, animals were slaughtered attached temporary slaughterhouses in days of Kurban festival.
Legislation in Thrace after & during feast of sacrifice

- All livestock was checked systematically by clinical surveillance before and after the festival in Thrace region.
- Temporary animal markets designated for the festival were tightly checked.
- Regular visiting to villages in Istanbul metropolitan after the festival was applied in order to check any suspicion for FMD and monitoring illegal movement.
  - Animals from Anatolia were not accepted in any occasion by strict regulations and controlling strictly well maintained check points.
  - All livestock were checked systematically by clinical surveillance before and after the festival.
  - Temporary animal markets designated for the festival were tightly checked.
Surveillance components in Thrace

• Annual FMD sero-surveillance
  – Operational since 2000s

• Component 1.3 T.H.R.A.C.E.
  – Focus on high priority areas
  – Both clinical and serological for FMD
    • Started in 2013
    – SGP/PPR clinical surveillance
      • Starting Cycle-2 2014
FMD Serosurveillance sampling 2013
High priority zone in Istanbul sampling 2013
Distribution of initial positives
Results and conclusion of 2013

• After retest and follow up investigations, there were no clustered sero-positivity
• It was concluded that there was no risk for circulation of live virus.
• Initial indiviudal positives can be explained by false positivity in NSP-ELISA
  • To confirm this hypothesis suspected samples were retested with
  • LPB ELISA for antibodies to SP
  • The titers obtained were too low due to sero-type O, A and Asia-1 of to suggest real FMDV replication.

• Secondly follow up investigations were designed around initial individual positive epi-units.
  • 1150 LR&SR sera and 23 probang samples were collected again.
• Results were not indicative of circulation of live virus.
Surveillance activities in T.H.R.A.C.E in 2014 Cycle 1

- Total of 10500 animals were checked clinically in 211 epi-units of high priority zone, mainly in Istanbul.
- Total of 1003 sera were collected from animals in 38 epi-units of high priority zone, mainly in Istanbul.
- Abattoirs were also checked and sampled.

<table>
<thead>
<tr>
<th>Surveillance type</th>
<th>Activity type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>Number of epi-units controlled</td>
<td>211</td>
</tr>
<tr>
<td>Clinical</td>
<td>Number of animals controlled on farm</td>
<td>10500</td>
</tr>
<tr>
<td>Clinical</td>
<td>Number of cattle controlled at abattoir</td>
<td>37</td>
</tr>
<tr>
<td>Serological</td>
<td>Number of epi-units controlled</td>
<td>38</td>
</tr>
<tr>
<td>Serological</td>
<td>Number of animals controlled on farm</td>
<td>1003</td>
</tr>
<tr>
<td>Serological</td>
<td>Number of animals controlled on abattoir</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11822</td>
</tr>
</tbody>
</table>
Results of Cycle 1

• Serum from one animal was found positive in Silivri district of İstanbul.
• After retest and follow up investigations, there were no clustered sero-positivity or virus circulation.
Plan for other cycles in 2014

1. FMD serosurveillance in Istanbul
   i. % 25 expected prevalence, %95 CI
   ii. 119 epi-units for three cycles were determined.
   iii. Epi-units will be different in each cycle.
   iv. 11 animals from each epi-units will be randomly sampled
   v. Not in same days with clinical surveillance
   vi. No age group targeted
   vii. Cattle, buffalo, sheep and goats
Plan for other cycles in 2014

1. FMD clinical surveillance in Istanbul
   i. % 5 expected prevalence, %95 CI
   ii. 119 epi-units for three cycles were determined.
   iii. Epi-units will be different in each cycle.
   iv. 60 animals from each epi-units will be randomly checked
   v. Not in same days with blood sampling
   vi. No age group targeted
   vii. Only cattle and buffalo
Plan for other cycles in 2014

1. FMD clinical surveillance in other provinces
   i. % 5 expected prevalence, %95 CI
   ii. 171 epi-units for three cycles were determined.
   iii. Epi-units will be different in each cycle.
   iv. 60 animals from each epi-units will be randomly checked
   v. Not in same days with blood sampling
   vi. No age group targeted
   vii. Only cattle and buffalo
Plan for other cycles in 2014

1. PPR&SGP clinical surveillance in all Thrace
   i. %10 expected prevalence, %95 CI
   ii. 61 epi-units for three cycles were determined.
   iii. Epi-units will be different in each cycle.
   iv. 30 animals from each epi-units will be randomly checked.
   v. No age group targeted.
   vi. Only sheep and goat.
SGP&PPR situation in Thrace 2014

• No PPR record
• 5 SGP outbreak in Kırklareli province January and February.
FMD SITUATION IN ANATOLIA
FMD in Turkey
(epidemic curves 1999—2014/02)
Type O situation 2014 (FAR-09)

January (17)
- O
- ?
- Novel
- Endemik

February (16)
- O
- Novel

- 13 type O samples representing new clusters were sent to WRL.
- Novel and endemic type O strains matched with OTUR07 vaccine strain in initial 2dVNT tests.
16 type A samples representing new clusters were sent to WRL.

Novel type A strains did not match with ATUR06 vaccine strain in initial 2dVNT tests.
Asia1 situation

- Number of Asia1 outbreaks has been decreasing and became sporadic for one year.
- Two Asia1 samples were sent to WRL.
- Large outbreaks are not expected.
Comparison of 2014 with the curves of last years
Vaccination policy 2014

• Neither vaccine shortages nor a delay in vaccination program (03/03-18/04/2014)
• Improved cover: >85 % of bovine population (12million) twice a year
• Ring vaccination response to outbreaks.
• Improved antigen content: 6PD50 vaccines
• Booster dose for calves
• Sheep&goat vaccination when farmer request
• Contents: OTUR07 (PanAsiaII), ATUR06 (A05), Asia1 TUR11 (Sindh-08)
• ATUR06→ATUR11 (SIS10) change is under evaluation
LR Vaccination Campaign in Anatolia
Spring 2014

- Tri-valent (A, O, Asia1)
- Bi-valent (A, O)
- Tri-valent + booster dose for calves
Other control activities

• Diagnosis and Genetic and Antigenic Characterization of Isolates
• Epidemiological investigations
  • Active and passive surveillance
• Routine control measures in case of disease outbreak (biosecurity, restriction, quarantine)
• Control of animal movements and markets
• Training vets and awareness activities
Updates on FMD Institute

• Administration of the Institute has been changed.
• Vaccine production techniques has been revised as outlined below,
  – cell quality & quantity
  – virus production
  – antigen recovery
  – antigen quantity has been greatly improved to reach 6PF50/multiple serotypes for whole country.
Risk based strategic plan for FMD (main goals)

• National risk based strategic plan was developed and presented to Minister.
• Main goal is to achieve OIE status of FMD free with vaccination by 2023, while maintaining FMD free status with vaccination in Thrace.
• Aegean and Marmara Region will be FMD free status with vaccination 2018, while other regions by 2023
thanks