Sheep and Goat Pox in Greece
an update (early November 2013)

Dimitrios Dilaveris, Animal Health Directorate /Dept. of Infectious Diseases (Min. of Rural Dev. & Food)
Sheep and Goat Pox in Greece (as at early November 2013)

• Current events
• Measures in place
• Epidemiological investigation
• Conclusions
Sheep and Goat Pox - Current Events
1st outbreak (Northen Evros near Pythion village)

- **12/8/2013** ⇒ Notification, by a sheep farmer, of cutaneous lesions in some of his sheep (~ 3km from Evros river & 1km from Pythion village).
- Visit by an Official Veterinarian, the same day holding and Northern Evros placed under official restrictions due to SGP suspicion
- Activation of the relevant contingency plan.
- **14/8/2013** ⇒ SGP lab confirmation (PCR & AGID at the Dept of Virology of the Athens Center of Veterinary Institutes = NRL).
- Establishment of protection (3km) and surveillance (10 km) zones.
- **15/8/2013** (A very important religious National Holiday in Greece) ⇒ Preliminary notification (SANCO-Bulgaria-Turkey)
- **16/8/2013** ⇒ stamping out – cleaning / disinfection of the infected holding, online notification [ADNS-WAHIS].

<table>
<thead>
<tr>
<th>Total susceptible animals</th>
<th>130 Sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total animals affected</td>
<td>10</td>
</tr>
<tr>
<td>Total animals that died</td>
<td>1</td>
</tr>
<tr>
<td>Distance from Evros River</td>
<td>3 km</td>
</tr>
</tbody>
</table>
Sheep and Goat Pox - Current Events
29/8 - 26/9 2013 – 10 Additional outbreaks in the Northern Evros area

- **29/8/2013** ⇒ Confirmation of the 2nd SGP outbreak (3-4 km from the city of Orestias & ~10 km from 1st outbreak).

- Until 26/9/2013 an additional 9 SGP outbreaks confirmed, all in the North Evros area.

- Outbreaks within a 4-5 km zone from the Evros river /border with Turkey.

- One outbreak 250 meters from the border with Bulgaria (*Dikaia village*)

- For some of these outbreaks ⇒ possible connection with previously confirmed outbreaks could be established (milk transport truck, common grazing areas e.t.c.)

- For the rest ⇒ no direct or indirect connection with known outbreaks (multiple primary incursions ????).

- In some outbreaks lesions observed at advanced stages too (> 4-5 days old)

NOTE: Secondary outbreaks within a protection zone sometimes tend to appear late (e.g. 14 days or more after the confirmation of the primary outbreak)
SGP, 27/9 – 6/10 2013 outbreaks in Southern Evros too
1 outbreak outside the Evros area

- 27/9/2013 ⇒ confirmation of the 1st outbreak in Southern Evros (Protoklissi village, near the city of Soufli).
- Restrictive measures in place for Northern Evros, now expanded to Southern Evros too.
- On 5/10/2013 ⇒ 1st outbreak confirmed close to Thessaloniki (approximately 300 km from the Evros outbreaks).
- Until 6/10/2013 ⇒ 4 more outbreaks confirmed in North Evros + 1 more in South Evros (close to the 1st one). Restrictive measures in place for Evros implemented in Thessaloniki prefecture too.
SGP, 7/10 - 25/10/2013
additional outbreaks in Evros - Thessaloniki, outbreaks in Xanthi too

• Northern Evros ⇒ confirmation of another 6 outbreaks.
• Southern Evros ⇒ confirmation of another 1 outbreak.
• 25/10/2013 ⇒ confirmation of 2 outbreaks in Xanthi prefecture too (restrictive measures upon the entire prefecture).
SGP, 26/10-31/10/2013
additional outbreaks in the prefectures of Northern Evros-Thessaloniki-Xanthi
confirmation of the 1\textsuperscript{st} outbreak in Lesvos island
Additional outbreaks (confirmed + suspected) in Northern & Southern Evros, Thessaloniki, Xanthi, Lesvos, 1st suspicion in Rodopi prefecture.
MEASURES IN PLACE (1)

Northern Evros since 12/8/2013 exit of live animals, (of susceptible species) as well as other feed/fodder or other non edible material that could potentially transmit SGP is strictly prohibited (same measures now apply for the entire Evros as well as the Thessaloniki, Xanthi, Rodopi prefectures and Lesvos island).

In protection – surveillance zones measures of Dir. 92/119 (at least)

Stamping out of the infected holding (sometimes before lab results) disinfection - establishment of zones (for at least 21 days)

Protection zone (3km)- at least 21 days:

- Prohibition of all movements (animals kept indoors at all times)
- Periodic visits to sheep/goat holdings
- No sheep/goats may leave their holdings /or the zone

Surveillance zone (10km)- at least 21 days

- Prohibition of movements through public roads
  (derogations apply only for specific pastures or animal buildings).
- Periodic visits to sheep/goat holdings
- No sheep/goats may leave their holdings /or the zone
MEASURES IN PLACE (2)

Additional measures:

✓ Pre-emptive killing of sheep in two holdings adjoining outbreak no 1 (lab tests returned negative)
✓ Prohibition of movements of milk transport trucks in the Evros protection zones (1 dairy plant + 3 creameries)
✓ Prohibition of slaughter of sheep/goats originating from the zones (protection + surveillance zones) unless this is an emergency slaughter and other restrictions implemented in affected prefectures (risk analysis).
✓ Prohibition of grazing close to Evros river, (entire Evros prefecture)
✓ Additional clinical surveillance of small ruminant holdings in villages close to Evros river (entire Evros prefecture)
✓ Increased biosecurity measures (special directions for milk transport trucks) – avoidance of unnecessary visits in small ruminant holdings
✓ Targeted – intensive clinical surveillance ± sampling around the town of Didymoteicho (latest outbreaks)
✓ Additional vets of the East Macedonia & Thrace Region were temporarily assigned to the Dept of Vet Medicine of Orestias

Measures under consideration:

To extend the duration of measures in the protection ± surveillance zones (>21 days, already implemented)

Rest of country: increased awareness
AREAS OF GREECE CURRENTLY UNDER RESTRICTIONS DUE TO SGP

- SGP outbreaks
- SGP suspicions

Map showing areas under restrictions: Greece, F.Y.R.O.M., Bulgaria, Albania, Turkey.
EPIDEMOLOGICAL INVESTIGATION

GREECE

Evros prefecture: Was free from SGP for up to 13 years (last SGP outbreak in 2000)
Rest of the country: last outbreak in 2007 (1 single outbreak in Lesvos)

BULGARIA: last outbreak reported in 1996 (source: OIE)

TURKEY

Anatolia: Disease endemic (source: OIE)

European Turkey (East Thrace): Since the beginning of 2013, SGP outbreaks reported in various E. Thrace districts, close to Evros river too. Disease endemic in Anatolia (source: OIE-ADNS)

First outbreak on Greek soil at 14/8/2013 - Potential causes: (working hypothesis)

- Illegal movements of animals and persons
- Wild animals movements (mechanical transmission)
- Wild birds feeding on carcasses (mechanical trans.)
Background information (1994-2000)

Historical observations from past SGP epidemics in the Evros area

- Clinical signs observed predominantly in sheep
- Outbreaks tended to be sporadic, often at long distances from one another
- Outbreaks usually occurred during the period between mid-summer to mid-winter
- Outbreaks were usually located close to Evros River (=natural border with Turkey)
- Clusters of many outbreaks within an epidemiologically relevant area (e.g. a village) were not common
- Few outbreaks could span over a relatively long period and sometimes new outbreaks occurred just when the epidemic seemed to have died-out

History repeating itself in 2013 ???
EPIDEMOLOGICAL INVESTIGATION

History repeating itself in Evros ???

Most significant SGP outbreaks in the Evros Prefecture, 1994-2000

SGP outbreaks in the Evros Prefecture, 14/8 - 6/11/2013

Map Courtesy of Dr. C. Dadousis (DREVM of Orestias)
EPIDEMOLOGICAL INVESTIGATION
History repeating itself in Lesvos too ???

10/01/2007
Lesvos Island, last SGP outbreak in Greece before 2013

31/10/2013
Lesvos Island, confirmation of the 1st SGP outbreak in 2013
SGP – Present situation in Greece and neighboring countries
(source : OIE + ADNS reports of confirmed outbreaks)

<table>
<thead>
<tr>
<th>Greece</th>
<th>Bulgaria</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>(14/8 - 6/11/2013)</td>
<td>Burgas: 1 outbr.</td>
<td>Anatolia: Disease endemic (OIE)</td>
</tr>
<tr>
<td>Northern Evros: 23 outbr.</td>
<td>(conf. 20/9/2013)</td>
<td>European Turkey: Outbreaks reported in several districts, close to the Evros river too (2013/ADNS-OIE)</td>
</tr>
<tr>
<td>Southern Evros: 3 outbr.</td>
<td>Blagoevgrad: 2 outbr.</td>
<td></td>
</tr>
<tr>
<td>Thessaloniki: 4 outbr.</td>
<td>(conf. 5/10/2013 &amp; 18/10/2013)</td>
<td></td>
</tr>
<tr>
<td>Xanthi: 4 outbr.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesvos: 1 outbr.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As of 2013 SGP outbreaks reported in various East Thrace districts, close to Evros river too.
**SGP - Current situation in the wider Thrace area 1 Jan-22 Sep 2013**

**TURKEY**

- **01/01/2013 - 22/9/2013**
  Notification (ADNS system) of **103 SGP outbreaks in Turkey** (in total)
  
  **European Turkey**
  (notification in ADNS system)

- **1 Jan – 31 May 2013**
  6 confirmed SGP outbreaks

- **1 June - 22 Sep 2013**
  22 confirmed SGP outbreaks

**GREECE**

- **16/8/2013**
  Notification (ADNS system) of the **1st outbreak (~ 3 km from the Turkish border, in the Evros Prefecture – Python village)** – confirmation 14/8/2013)

**BULGARIA**

- **23/9/2013**
  Notification (ADNS system) of the **1st outbreak (~ 9 km from the Turkish border, in the Burgas Province)** – confirmation 20/9/2013.
Conclusions (1)

Possible route of introduction of SGP

**Illegal immigration**
Not very likely for Evros (number of illegal immigrants greatly reduced over the past months due to increased safeguard measures on the border with Turkey), more likely route for Lesvos.

**Illegal imports of animals – products from Turkey?**
Not very likely (animals phenotypically different from native breeds – price of meat substantially higher in Turkey over the past months)

**Tourists**: (Lesvos ?)

**Insect bites**: Not considered to be a common vehicle for SGP, cannot be excluded (difficult to prove too !!)

**Wildlife ?**
As biological vectors: Not very likely (some wild goats present, but on the northern part of Evros, close to the Bulgarian border)
As mechanical vectors: (Mammals-birds ?)

**Other (non traceable) indirect transfer of the virus (?)**

( a combination of all the above routes of introduction)
Conclusions (2)

Further spread of SGP after the 1\textsuperscript{st} outbreak

\textbf{Within the Evros prefecture :}
- Secondary spread due to direct or indirect contacts

- However :
  \textit{Strong evidence indicates that a number of outbreaks, that followed outbreak number 1, could be primary ones (independent primary incursions of SGP).}

\textbf{In Xanthi prefecture :}
Most probably spread through illegal movements of small ruminants related to the religious festival of Kurban Bairam (15 Oct 2013).

\textbf{In Thessaloniki prefecture:}
Unclear.

\textbf{Lesvos island :}
Tourists, illegal immigrants, other ??
17-18 Oct 2013: “Double coordination meeting” for Sheep and Goat Pox in Greece and Bulgaria.

17 Oct 2013

Meeting in Orestias (Northern Evros – Greece)

- Representatives from the Central Veterinary Services of Greece & Bulgaria
- Veterinary Officers from the local veterinary Services of the entire East Macedonia and Thrace Region (Greece).

18 Oct 2013

Meeting in Svilengrad (Haskovo-Bulgaria)

- Representatives from the Central Veterinary Services of Greece & Bulgaria
- Veterinary Officers from the local veterinary Services of all Bulgarian provinces on the border with Turkey & Greece
- Veterinary Officers from the local veterinary services of the Evros prefecture

A representative of the E. Commission (DG SANCO) present in both meetings
Acknowledgements

Special thanks to:

- **Dr Constantinos Dadousis** (Director, Directorate of Rural Economy and Veterinary Medicine of Orestias)
- **Dr Achilleas Sachpatzidis** (Director, Directorate of Veterinary Medicine of the Eastern Macedonia and Thrace Region)
- **Dr Evangelia Plevraki** (Head, Dept of Veterinary Medicine of Evros)
- **Dr Konstantia Tasioudi & Dr Peristera Iliadou** (Dept of Virology of the Athens Center of Veterinary Institutes, National Reference Laboratory for Sheep and Goat Pox).

All colleagues of the Depts of Veterinary Medicine of Orestias, Evros, Thessaloniki, Xanthi & Lesvos !!!!

Our Bulgarian colleagues for the close cooperation !!!!
Thanks for your attention !!!