Point sur la situation du petit coléoptère de la ruche en Italie

Franco Mutinelli

National Reference Centre for Beekeeping
Istituto Zooprofilattico Sperimentale delle Venezie
E-mail: fmutinelli@izsvenezie.it
2014 - Calabria region: 60 infested apiaries
2014 - Calabria region

- Early detection: No
- Early notification: No
- Early reaction: yes, as soon as SHB was notified, intense surveillance started
- Enormous workload for the veterinary services (in part already trained)
- Need for training (provided)
- Collaboration with beekeepers depending on associations (some were collaborative, others less or even against)
Sicily region - 7 November 2014

- Melilli (SR) municipality
- Migratory apiary with 56 hives
- In the Gioia Tauro area from April to August 2014
2014 – Sicily region

- Early detection: Yes
- Early notification: Yes
- Early reaction: yes, as soon as SHB was notified, intense surveillance started
- Good collaboration with beekeepers and associations
Surveillance 2014
Eradication and/or containment of the infestation

Measures applied

- Immediate notification of *Aethina tumida*
- Restriction of any movement related to honey bee colonies (IN and OUT)
- Census of apiaries and colonies

20 km protection zone:

- census of apiaries
- visit of all apiaries
- visit of the colonies according to 5% expected prevalence
- **destruction** of the infested apiaries (@3,200 hives in 2014; @2,900 in 2015; @3,000 in 2016) and **compensation** (according with a specific decree)
- if negative, traps should be applied
- traceability of commercial and migratory movement in and out of the zone
Measures applied

**Surveillance zone** (The whole territory of the two concerned regions):

- census of apiaries
- visit of apiaries selected on the basis of risk analysis (migration in infested areas, honeybees or materials exchanges) or randomly
- visit of the colonies according to 2% expected prevalence
- destruction of infested apiaries
- if negative, traps should be applied
- traceability of commercial and migratory movement in and out of the zone

- No positive apiaries in the surveillance zone
Veterinary services were collaborative and actively participated

National surveillance plan 2015-2017
non migratory apiaries randomly selected

National surveillance plan 2015-2017
migratory apiaries (risk-based)

Surveillance plan 2015-2017
Calabria and Sicily
SHB re-occurrence – September 2015

September 16, 2015
One apiary in Taurianova municipality
30 artificial swarms (6.08.15) + 2 natural swarms (captured on site, 16 and 22.08.15)

September 28, 2015
One apiary in Varapodio municipality
66 beehives

September 28, 2015
One apiary in Varapodio municipality
92 beehives

September 29, 2015
One apiary in Oppido Mamartina municipality
60 swarms (27.04.15)
The situation as of 31 December 2015: 29 infested apiaries
<table>
<thead>
<tr>
<th>Territory</th>
<th>Epidemiological units</th>
<th>N. apiaries</th>
<th>N. hives for apiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy (excluded</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calabria and</td>
<td>Northern</td>
<td>177 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95%</td>
</tr>
<tr>
<td>Sicily</td>
<td>Central</td>
<td>170 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>Southern</td>
<td>163 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95%</td>
</tr>
<tr>
<td>Region</td>
<td>Territory/zones</td>
<td>N. apiaries</td>
<td>N. hives for apiary</td>
</tr>
<tr>
<td>Sicily</td>
<td>protection zone</td>
<td>53 apiaries</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>surveillance zone +</td>
<td>147 random (2% expected prevalence CI 95%)</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>the rest of territory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Region of Calabria and Sicily: sentinel honey bee nucleus colonies

Sentinel units each composed of 2 nucleus honey bee colonies
Calabria region: April-December 2016

6 honey bee sentinel units (2 nucleus colonies each) have been found infested by SHB adults
New SHB incident on 25-28 July 2016 in the province of Cosenza (Calabria region)

An unregistered beekeeper, 6 apiaries
4 infested apiaries destroyed (128 colonies)
2 negatives still alive (115 colonies)
On 12/9, 1 apiary found infested and destroyed (70 colonies)
Protection zone = 10 km
Surveillance zone = the whole territory of the Calabria region
Province of Cosenza (Calabria region)

Protection zone of 10 km radius:

- determined according with the characteristics of the outbreak as was done in Sicily
- easier to manage
- intensive surveillance in a radius of 1 km around the first outbreak
- less workload for official veterinarians
- more precise inspection activity
- less impact on beekeepers activity (movement restriction)
- strong collaboration among different competent authorities (vet services, national forest corp, police)
- good collaboration with beekeepers
The situation as of 30 September 2016: 30 infested apiaries notified by beekeepers (13-23 September)
The situation as of 31 December 2016: 40 infested apiaries and 1 swarm
Comparison between location of 2014 (green), 2015 (blu) and 2016 (red) infested apiaries
Aethina tumida: phylogenetic analysis

Reggio Calabria – 2014 and 2015

Cosenza – 25 July 2016

(Granato et al., 2016)
Traps application

- Only rarely beetles were found in the Better Beetle Blaster type traps
- Diagnostic traps (corrugated plastic sheet, Schäfer type) were rarely able to capture beetles
- In addition, this type of trap was very soon propolised by the bees
- Better Beetle Blaster traps are propolised too but it takes longer
- In addition, the hot temperature of summer 2015 strongly affected Schäfer type traps; they became curve and could not adhere anymore to the hive bottom board
Aethina tumida not found on rotten fruits


(Mutinelli et al., 2015)
### SHB surveillance program - Italy - 2017

<table>
<thead>
<tr>
<th>Territory</th>
<th>Epidemiological units</th>
<th>N. apiaries</th>
<th>N. hives for apiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>Northern</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95% (90% se, 100% sp)</td>
</tr>
<tr>
<td></td>
<td>Central</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>Southern</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>2% expected prevalence CI 95%</td>
</tr>
<tr>
<td>Region</td>
<td>Territory/zones</td>
<td>N. apiaries</td>
<td>N. hives for apiary</td>
</tr>
<tr>
<td>Sicily</td>
<td>Catania Siracusa</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>Ragusa</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>Rest of territory</td>
<td>164 non migratory random selected (2% expected prevalence CI 95%)</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td>Calabria</td>
<td>Protection zones</td>
<td>Sentinel nucleus colonies/86 apiaries</td>
<td>5% expected prevalence CI 95%</td>
</tr>
<tr>
<td></td>
<td>Rest of territory</td>
<td>160 random (2% expected prevalence CI 95%)</td>
<td>5% expected prevalence CI 95%</td>
</tr>
</tbody>
</table>
National surveillance plan 2017 – sentinel nucleus colonies: ports with import of wood from Africa

Genova

Livorno

Napoli

Salerno
### Calabria 2017

#### National Reference Laboratory for Beekeeping

**Aethina tumida** - Confirmed Cases

**Epidemiological Situation as of November 30, 2017**

<table>
<thead>
<tr>
<th>N.</th>
<th>Locality</th>
<th>Municipality</th>
<th>Province</th>
<th>Region</th>
<th>Eggs</th>
<th>Larvae</th>
<th>Pupae</th>
<th>Adults</th>
<th>Note</th>
<th>Confirmation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>01_2017</td>
<td>C. Da Tredio</td>
<td>Palmi</td>
<td>RC</td>
<td>Calabria</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>Natural colony</td>
<td>March 24, 2017</td>
</tr>
<tr>
<td>02_2017</td>
<td>Laureana Di Borrelli</td>
<td>Sidermo</td>
<td>RC</td>
<td>Calabria</td>
<td>Several</td>
<td>11</td>
<td>9</td>
<td>1</td>
<td>Natural colony</td>
<td>April 03, 2017</td>
</tr>
<tr>
<td>03_2017</td>
<td>C. Da Mele</td>
<td>Scilla</td>
<td>RC</td>
<td>Calabria</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>Natural colony</td>
<td>April 03, 2017</td>
</tr>
<tr>
<td>04_2017</td>
<td>C. Da Colture</td>
<td>Stignano</td>
<td>RC</td>
<td>Calabria</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>Natural colony</td>
<td>April 18, 2017</td>
</tr>
<tr>
<td>05_2017</td>
<td>Via Stretto</td>
<td>Scilla</td>
<td>RC</td>
<td>Calabria</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Natural colony</td>
<td>May 25, 2017</td>
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</tbody>
</table>

#### National Reference Laboratory for Beekeeping

**Aethina tumida** - "Sentinel Honey Bee Nuclei"

**Order of the Ministry of Health 0002413-01/02/2016-DGSF-COD_UO-P, 0003095-06/02/2016-DGSF-COD_UO-P**

**Epidemiological Situation as of November 30, 2017**

<table>
<thead>
<tr>
<th>N.</th>
<th>Sentinel Honey Bee Nuclei (*)</th>
<th>Locality</th>
<th>Municipality</th>
<th>Province</th>
<th>Region</th>
<th>Eggs</th>
<th>Larvae</th>
<th>Pupae</th>
<th>Adults</th>
<th>Note</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>01_2017</td>
<td>N. 8</td>
<td>Drosi</td>
<td>Rizzoconi</td>
<td>RC</td>
<td>Calabria</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>April 03, 2017</td>
</tr>
<tr>
<td>02_2017</td>
<td>N. 31</td>
<td>C. Da Colture</td>
<td>Stignano</td>
<td>RC</td>
<td>Calabria</td>
<td>1</td>
<td></td>
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<td>June 14, 2017</td>
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<tr>
<td>03_2017</td>
<td>N. 17</td>
<td>C. Da Fiumara Alta</td>
<td>Villa San Giovanni</td>
<td>RC</td>
<td>Calabria</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>June 29, 2017</td>
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<tr>
<td>04_2017</td>
<td>N. 6</td>
<td>C. Da Campo</td>
<td>San Pietro In Caridra</td>
<td>RC</td>
<td>Calabria</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<td>July 31, 2017</td>
</tr>
<tr>
<td>05_2017</td>
<td>N. 25 bis</td>
<td>Maropati</td>
<td>RC</td>
<td>Calabria</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>August 02, 2017</td>
</tr>
<tr>
<td>06_2017</td>
<td>N. 61</td>
<td>Straada Statale</td>
<td>Candidoni</td>
<td>RC</td>
<td>Calabria</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>September 28, 2017</td>
</tr>
</tbody>
</table>
Stignano: April 2017
Comparison between 2014 (green), 2015 (blu), 2016 (red) and 2017 (brown) infested apiaries
Epidemiological situation: November 2017

Protection zone of 30 km radius
Measures adopted in Sicily region following Villa S. Giovanni’s infested sentinel nuclei

OGGETTO: Misure straordinarie da adottare a seguito di rinvenimento di Aethina tumida in un nucleo sentinella posizionato presso il Comune di Villa San Giovanni (RC).

Sentinels in Southern Italy as of today
Perspectives - Calabria

- Protection zone = 30 km (province of Reggio Calabria and Vibo Valentia)
- Protection zone = 10 km (province of Cosenza)
- Honey bee sentinel nucles colonies
- The whole territory of the region remains under surveillance
Perspectives - Sicily

- Protection zone = 10 km (province of Siracusa and Catania) lifted after 2 years without SHB detection (Decision 2017/370/EU)
- The whole territory of the region remains under surveillance for 2 more years (5 years in total)
- Increased surveillance by means of sentinels along the strait of Messina
Perspectives - SHB

✓ National beekeeping industry database
✓ Early detection
✓ Early notification
✓ Early reaction
✓ Intense surveillance based on sentinel nucleus colonies and apiaries
✓ Specific regulation (legal basis for any measures adopted)
✓ Movement restrictions
✓ Collaboration among different competent authorities, beekeepers and their associations
Thank you for your attention

http://www.izsvenezie.com/aethina-tumida-in-italy/