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FINAL REPORT OF A FACT-FINDING MISSION  
CARRIED OUT IN  
ITALY  
FROM 13 JUNE 2016 TO 17 JUNE 2016  
IN ORDER TO  
GATHER INFORMATION ON BEE HEALTH

*In response to information provided by the Competent Authority, any factual error noted in the draft report has been corrected; any clarification appears in the form of a footnote.*

## ***Executive Summary***

*This report describes the outcome of a fact-finding mission carried out in Italy, from 13 to 17 June 2016, as part of the DG Health and Food Safety programme.*

*The overall objectives of the fact-finding mission were to:*

- *gather information on the state of implementation of EU legislation on bee diseases, and possible additional legislation on the same topic;*
- *better understand the monitoring, surveillance and control systems in place for bee health;*
- *verify the correct application of EU requirements for international trade of bees, and for protective measures to be applied in relation to small hive beetle;*
- *determine possible gaps and difficult areas in existing EU legislation, and scope for possible improvements for a better protection of bee health.*

*Overall, the report concludes that:*

*The Italian authorities have invested a lot of resources to develop a comprehensive and operational control system for bee health. The system for registration of apiaries and their movements being implemented is a promising tool for surveillance. The application of national control measures for the main bee diseases benefits from clearer interpretation rules, but is still largely dependent on clinical expression.*

*The control of the small hive beetle in Calabria is uncertain, but the spill over into Sicily was effectively managed. Effective controls and support from the beekeeping industry contribute to confidence in the favourable situation in this latter region. The challenges faced by Italy, and experience gained on strategic, tactical and practical aspects for the control and eradication of the small hive beetle are hugely valuable at European level, for a better preparation and efficient early response of this exotic pest.*

*The report contains no recommendations due to the fact-finding nature of the mission.*

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## ABBREVIATIONS AND DEFINITIONS USED IN THIS REPORT

| <b>Abbreviation</b>   | <b>Explanation</b>  |
|-----------------------|---|
| ADNS                  | Animal Disease Notification System, a system developed to notify about disease outbreaks in the countries connected to the application                        |
| <i>Aethina tumida</i> | Small hive beetle   |
| BIP                   | Border Inspection Post  |
| CA                    | Competent Authority   |
| CCA                   | Central Competent Authority   |
| EU                    | European Union  |
| IZS                   | <i>Istituto zooprofilattico sperimentale</i>  |
| NRL                   | National Reference laboratory   |
| SIMAN                 | <i>Sistema Informativo Malattie Animali Nazionale</i>   |
| TRACES                | Trade Control and Expert System, a trans-European network for veterinary health which notifies, certifies and monitors imports, exports and trade in animals. |
| <i>Varroa</i>         | <i>Varroa destructor</i>  |

## 1 INTRODUCTION

This fact-finding mission took place in Italy from 13 to 17 June 2016 and was undertaken as part of the planned programme of DG Health and Food Safety. The mission team comprised two inspectors from DG Health and Food Safety, one National Expert from a Member State, and was accompanied during the whole mission by a representative of the central competent authority (CCA) for bee health, the Ministry of Health.

## 2 OBJECTIVES AND SCOPE

The objective of the mission was to:

- Gather information on the state of implementation of European Union (EU) legislation on bee diseases, and possible additional legislation on the same topic;
- Better understand the monitoring, surveillance and control systems in place for bee health;
- Verify the correct application of EU requirements for international trade of bees, and for protective measures to be applied in relation to small hive beetle;
- Determine possible gaps and difficult areas in existing EU legislation, and scope for possible improvements for a better protection of bee health.

The scope of the mission included health control systems and activities in relation to honeybees and bumble bees.

In pursuit of this objective, the following meetings were held and sites visited:

| Visits/Meeting                 | No. | Comment                |
|--------------------------------|-----|------------------------|
| Central Competent Authorities  | 1   | Ministry of Health     |
| Regional Competent Authorities | 3   | Veneto, Sicily, Puglia |
| Local Competent Authorities    | 4   |                        |
| Honey bee holdings             | 3   |                        |
| Beekeepers associations        | 2   |                        |

## 3 LEGAL BASIS

The mission was carried out under the general provisions of EU legislation, and, in particular:

- Article 45 of Regulation (EC) No 882/2004 of the European Parliament and of the Council of 29 April 2004 on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules;

## 4 BACKGROUND

Honeybees (*Apis mellifera*) play an important role in both pollination and the production of honey and other apiculture products. Following the report of increase in honey bee mortality by several countries both within and outside the EU, the European Commission made a communication to the European Parliament and the Council<sup>1</sup>, outlining its actions to protect bee health proactively.

The European Union has established certain harmonised rules to protect and maintain the health of bees, among which are health standards for importation and intra-Union trade of for honeybees and bumble bees (*Bombus* spp.), as these latter, bred and traded for pollination, can carry diseases transmissible to the former.

Between September and December 2014, Italy reported the detection of multiple outbreaks of small hive beetle (*Aethina tumida*) in Calabria, and one in Sicily. As a consequence, Commission Implementing Decision 2014/909/EU laid down protective measures to be applied in these regions. In 2015, Italy reported the detection of more outbreaks of small hive beetle in Calabria.

### 4.1 OVERVIEW OF THE BEE SECTOR IN ITALY

According to data from the competent authorities, more than 40,000 beekeepers are registered in Italy, for over 1.1 million hives (see table 1). Five regions have more than 100,000 registered beehives: Piedmont, Liguria, Lombardy, Emilia Romagna, Tuscany and Sicily. No holding is registered for the production of bumble bees.

Italy was considered in 2010 as the fifth Member State in terms of number of bee colonies, representing 9% of the EU census. It ranked as number 9 for honey production, representing 4.3% of EU honey production. According to beekeepers' associations, a sizeable market exists for the sale of honey-bees exclusively for pollination (sold as swarm without a queen bee, in rudimentary hives with three to four combs).

Few consignments of bees are certified for transhumance to or from Italy, and exclusively with France, Germany and Austria. On the opposite, in 2015, a significant trade of bees from breeding purpose was certified from Italy, to many other Member States. The main receiving Member States are France, United Kingdom and Finland. Italy receives bumble bees from Slovakia, Spain, Netherlands and Belgium and certifies few consignments to Greece (see table 2).

Few consignments of bumble bees are imported from Israel, and queen bees from Argentina and Chile (see table 3).

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<sup>1</sup> [http://ec.europa.eu/food/archive/animal/liveanimals/bees/docs/honeybee\\_health\\_communication\\_en.pdf](http://ec.europa.eu/food/archive/animal/liveanimals/bees/docs/honeybee_health_communication_en.pdf)

Table 1: beekeepers registered in the national database March 2016 (source: Ministry of Health)

| <b>Region</b>               | <b>Beekeepers</b> | <b>Apiaries</b> | <b>Hives</b>     |
|-----------------------------|-------------------|-----------------|------------------|
| Piedmont                    | 4,247             | 9,333           | 171,151          |
| Tuscany                     | 3,974             | 7,615           | 117,079          |
| Lombardy                    | 6,298             | 7,262           | 116,581          |
| Sicily                      | 1,075             | 4,012           | 109,484          |
| Emilia-Romagna              | 2,603             | 6,949           | 105,459          |
| Veneto                      | 5,248             | 7,548           | 75,505           |
| Calabria                    | 781               | 1,652           | 55,219           |
| Marche                      | 1,813             | 2,821           | 44,220           |
| Campania                    | 558               | 1,360           | 42,172           |
| Sardinia                    | 1,175             | 1,714           | 41,324           |
| Lazio                       | 1,907             | 2,503           | 33,749           |
| Trentino – South Tyrol (BZ) | 2,992             | 3,154           | 30,566           |
| Umbria                      | 1,420             | 1,970           | 30,283           |
| Abruzzo                     | 1,059             | 1,597           | 28,599           |
| Apulia                      | 474               | 971             | 23,401           |
| Trentino – South Tyrol (TN) | 1,775             | 2,090           | 22,025           |
| Friuli - Venezia Giulia     | 996               | 1,547           | 19,889           |
| Liguria                     | 1,258             | 1,607           | 15,327           |
| Basilicata                  | 316               | 438             | 11,587           |
| Molise                      | 305               | 516             | 9,456            |
| Aosta Valley                | 496               | 1,007           | 5,016            |
| <b>TOTAL</b>                | <b>40,770</b>     | <b>67,666</b>   | <b>1,108,092</b> |

Table 2: Number of consignments of bees subject to EU trade, to and from Italy (source: TRACES)

| <b>2015</b>     | <b>Bees</b>     |                     | <b>Bumble Bees</b> |
|-----------------|-----------------|---------------------|--------------------|
|                 | <b>Breeding</b> | <b>Transhumance</b> |                    |
| Bees from Italy | 111             | 10                  | 508                |
| Bees to Italy   | 44              | 15                  | 9                  |

Table 3: Number of consignment of bees imported to Italy (source: TRACES)

| <b>Imports to Italy</b> | <b>2014</b> | <b>2015</b> | <b>2016<br/>(Jan-May)</b> |
|-------------------------|-------------|-------------|---------------------------|
| Bees                    | 6           | 3           | 4                         |
| Bumble bees             | 33          | 24          | 8                         |

## 4.2 ORGANISATION OF THE OFFICIAL CONTROL SYSTEMS

The organisation of the official control systems is described in the Country profile for Italy, published on the Commission service website<sup>2</sup>. The control systems for registration and movement control of animals (including controls at border inspection posts (BIPs)), animal health, food of animal origin, and veterinary medicinal products, are managed by the Ministry of Health. The Ministry of Agriculture is in charge of the general conditions for the production and marketing of apiculture products, and control of plant protection products. The latter Ministry is responsible for developing the national triennial programme aimed at improving the production and marketing of apiculture products, in line with Council Regulation (EC) No 1234/2007.

## 5 FINDINGS AND CONCLUSIONS

### 5.1 REGISTRATION OF OPERATORS, CONTROL OF MOVEMENTS

#### 5.1.1 *Registration of operators, identification of holdings and hives*

1. EU legislation has not defined standards for registration of beekeepers or apiaries for animal health purpose; Regulation (EC) No 852/2004 requires the primary food producers to be registered (except those producing for private domestic use, or those producing small quantities of primary products sold to final consumer or small retail establishments).
2. The apiculture Law 313/2004 required all beekeepers to register to the local veterinary authorities, indicating the location and number of colonies. They were required to notify every year changes of locations or of number of colonies (10% or more). The access to subsidies was linked to such registration.
3. The Decree of Ministry of Health of 4 December 2009, further developed the registration requirements. All beekeepers are required to contact the local veterinary authority to be registered and to receive their code and a registration identity card. The code is the basis for registration of movements. Annual reports are required also when there has been no change to the numbers of apiaries or hives.
4. The producer code is linked to the keeper and the same code applies for all apiaries (in different locations) under the care of that operator. However, each location used by the beekeeper has to be identified by address and geographical coordinates in the register and operators are obliged to update the register at least once per year (during the last quarter).
5. Ministerial Decree of 11 August 2014 approved an operation manual for the management of beekeepers registration. It defined the operational characteristics of the national database for registration of beekeepers and movements as well as those of

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<sup>2</sup> [http://ec.europa.eu/food/audits-analysis/country\\_profiles/details.cfm?co\\_id=IT](http://ec.europa.eu/food/audits-analysis/country_profiles/details.cfm?co_id=IT)

official controls on beekeeper registration, to be carried out by local veterinary authorities.

6. The national database became fully accessible for the regional and local offices in September 2014. Prior to this, some regions had developed databases at their level, and data from these were entered into the central database.
7. Beekeepers are responsible for providing the information, local authorities are responsible for ensuring the information is entered into the database and for official controls, and regional authorities are responsible for supervising the system. The Ministry of Health has access to data on the numbers and types of beekeepers in Italy and locations and movements of bee colonies.
8. From 2017, Community grants will be based on the information in the national database.

Observations:

9. The 2009 Decree created a technical committee, gathering representatives of the Ministry of Health, of the Ministry of Agriculture, of Regions and of beekeeper associations, creating a forum for exchange and cooperation between stakeholders.
10. Current national legislation does not require registration of keepers of bumble bees or registration of locations where bees or bumble bees are kept only for pollination; the CCA indicated that they considered introducing such requirement.
11. Much effort has been spent on completing the registration of beekeepers in the past year. The regional and local competent authorities have obtained the assistance of beekeepers' associations to promote the registration among their members. Information about the requirement to be registered has also been communicated through local media and on posters in public places.
12. The period of registration for 2015 was extended until April 2016 in an effort to get all existing beekeepers registered. Some beekeeper's associations and some local authorities were assisting the keepers in presenting data for the database. Of the regional authorities visited, Veneto was the only one to state that 100% of the beekeepers were now registered.
13. In May 2016 there were 40,770 beekeepers and 67,666 apiaries registered in the national database. These figures represent a 29% increase of keepers and an 89% increase of apiaries compared to the status in the database in December 2015. Beekeeper associations met by the mission team stated that the difficulties met at the beginning were linked to the lack of familiarisation with the tool, and were appreciative of the manual and helpline developed to help end-users.
14. No sanctions are laid down by national legislation; the Law 313/2004 leaves the responsibility of determination of administrative sanctions to the regions<sup>3</sup>. The CA in

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<sup>3</sup> *In their response to the draft report the CA stated that the Law 154 of 28 July 2016 has introduced specific sanctions (up to € 4,000) for failure to register as beekeeper and report changes.*

Sicily presented evidence of recent administrative sanctions imposed in relation to beekeeper registration.

15. Certain regions still maintain a regional database of beekeepers, sometimes comprising more information than that required in the national database, but according to the CCA, interconnection and transfer of information into the national database is fully operational.
16. A registration system for official controls on registration of beekeeping has been in place since March 2016 and check-lists have recently been issued by the CCA. Official controls in this area are expected to be fully operational in 2017, with the objective for each local veterinary authority to check 1% of beekeepers, selected on a risk basis.
17. The beekeeper is required to post a sign at each apiary, with his/her registration code. National legislation does not foresee physical identification of hives, contrary to some regional pieces of legislation. All stakeholders met by the mission team indicated that theft of hives or colonies was a common nuisance, and beekeepers' associations are advocating the development of methods for identification of individual hives. A pilot project for electronic identification of hives was ongoing.

#### *5.1.2 Record of movements*

18. In accordance with Ministerial Decree of 4 December 2009, any sale of live bees must be notified immediately whilst setting up a new apiary or closing operations of an apiary must be notified within seven days after the event. Operators do not need to notify movements between registered apiaries operated by the same keeper.
19. Ministerial Decree of 11 August 2014 further specified those movements which may require a pre-movement animal health attestation. Such animal health attestations should be issued following a clinical inspection, and only in situations where national or regional legislation require animal health attestation for movements related to declared zones. These rules around animal health attestations were further explained to regional and local authorities in a letter from the Ministry of Health in December 2015.

#### Observations:

20. Tracing of movements of bees out of Calabria, performed following the detection of the small hive beetle there, required direct reporting by beekeepers as there was no national requirement for registration of movements of bees between different registered sites without a sale taking place.
21. The CCA stated that they plan to amend the national rules to require registration of all movements, including those for pollination purposes and movements between apiaries owned by the same keeper.
22. It is not possible to create maps of apiaries and movements directly from the national database. Such exercises require data to be extracted from the database and processed in the national reference laboratory (NRL) for bee diseases.

23. Some regions have introduced additional requirements for pre-approval of movements, with or without animal health attestation. Examples of variations seen in the regions visited included:
- Keepers required to report into the database their intention to move (7-10 days prior to movement), and wait for a pre-approval by the local authority before the movement can take place.
  - Animal health attestations required for movements between provinces, but not within a province, in the same region without being required under national or regional animal health measures or zoning.
  - Animal health attestations required for all movements of bees into the region, with individual identification of each hive.
  - Animal health attestations issued by local authorities without clinical on-site inspections.
24. The CCA was aware of the difficulties created by the regional variations, and was working on a project to streamline requirements for movements across the country.

#### *5.1.3 Trade and import*

25. The procedure and checks to be performed when issuing certificates for intra-Union trade are not subject to harmonised procedures at national level or in the regions visited. One local office (with mainly hobby beekeepers) stated that they sent an official veterinarian to perform a clinical check at the apiary before issuing any certificate, while another local office (dealing with professional beekeepers) based its certification on an annual sanitary visit, which included systematic sampling and analysis for diseases notifiable in Italy (including American foulbrood), and a declaration from the operator.
26. The certificates for intra-Union trade from Italy did not indicate the holding registration number of the beekeeper, but another identification number. The CCA explained that this number related to a specific authorisation to trade internationally, but is not linked to the holding or apiaries.
27. The CCA issued a note in 2010, to modify the procedure foreseen by Regulation (EU) No 206/2010 in case of importation of queen bees. EU regulation foresees that the consignment is sent to the final place of destination, where the queen bees are transferred into the receiving colonies, and the accompanying bees, cages and material are then sent to a competent laboratory for investigation. Instead, the Italian note requires that the consignments be sent directly from the BIP (of the two main airports) directly to one of the two nearby competent laboratories for such analysis.
28. The procedure foresees that the importer must notify the CA in advance for organisational matters. The importer is required to reach the competent laboratory with cages and new accompanying bees. The transfer of queen bees from their original to the new cages is performed in the laboratory. The bees, cages and material are then subject to investigation. Upon satisfactory outcome, the consignment is released for its transfer

to its final place of destination. The CA indicated that this system allowed a better risk mitigation, as the risk would be detected before introduction of imported queen bees into EU hives.

Observations:

29. The system proved to be effective for direct importations into Italy. The importer interviewed explained that the system worked to his satisfaction, and did not significantly affect the mortality rate or success of import, but required his presence at the laboratory for the transfer of queen bees. Prior arrangement was also essential to ensure presence of laboratory staff at the time of arrival of consignments.
30. The system was less effective when imported consignments entered into the EU through BIPs located in other Member States. No alternative control system was in place to ensure that consignments notified from these BIPs, but not going through the Italian system, would be subject to official controls or checks foreseen in Regulation (EC) No 206/2010. However, one such consignment was investigated by the mission team, the local veterinary authority had implemented and documented post-import controls according to EU requirements, with checks performed at the regional (Sicilian) laboratory.
31. One consignment reviewed by the mission team was notified in TRACES as entering through a BIP in Italy, while, according to the importer and the transport means recorded in the TRACES declaration, it entered in the EU into another Member State. The mission team asked whether the CA in Italy had notified this lack of control to the Member State of entry, but did not receive any answer.

**Conclusions on registration of operators and control of movements**

32. The creation of a national database for registration of apiaries and certain movements of bees has provided the competent authorities with a powerful information tool which can be very useful for understanding movement patterns and risks as well as for disease control/eradication measures.
33. The diverse regional rules adding requirements for pre-approval of movements and for animal health attestations make it complicated for beekeepers to understand and follow the rules, particularly when moving their bees between regions and may undermine their trust in and adherence to the rules.
34. Local authorities had developed various approaches to certification for EU trade. However, the absence of minimum standard for certification in relation to American foulbrood (see point 68), when national control standards are lower than those required by the certificate, and in relation to examination for small hive beetle when the pest is present in the country, weakens the reliability of the certification for these aspects.
35. The alternative system developed by the Italian authorities to check imported bees proves practically feasible and would provide a better control of the sanitary risk.

However, it is not easily applicable when imports are done through another Member State. When this Italian control system is not applied, the responsibility of applying the requirements under EU legislation is left to the local authorities, and there is no system in place to verify that the risk of introduction of exotic pests is consistently controlled.

## 5.2 BEE DISEASES

### 5.2.1 Diseases subject to notification and official control

36. Presidential Decree 320 of 1954 lists the animal notifiable diseases in Italy. Regarding bee diseases, this list includes American and European foulbrood, Nosemosis, acariosis, varroosis, *Aethina tumida* and *Tropilaelaps*. The last two diseases were included by a ministerial order of 2004. Sanitary measures are foreseen with more or less details for these diseases in the same Decree (Articles 154 to 158), or, for varroosis, in a specific ministerial order (of 17/02/1995).

#### Observations:

37. Since 2011, the CCA has issued notes clarifying and giving interpretation guidelines of the legal requirements for notification and sanitary measures to be implemented for nosemosis, varroosis, American and European foulbrood.
38. It is the responsibility of the local veterinary services to declare outbreaks into the national sanitary database (SIMAN). This system is not fully effective, as staff from the two official laboratories visited by the mission team indicated that they had diagnosed notifiable diseases from samples taken from hives with clinical signs, but the outbreaks were not subsequently recorded into the database.

### 5.2.2 General surveillance

39. In 2014, the CCA issued detailed guidelines regarding investigations to be carried out following the reporting of mortality or depopulation suspected to be linked to the use of plant protection products. These investigations should include a clinical visit from the local veterinary authorities, epidemiological investigation, and sampling of bees, pollen and plants. The NRL for bee diseases has listed a network of 10 laboratories providing analytical services for plant protection products for official controls.

#### Observations:

40. In Veneto, the beekeepers' association interviewed was offering a service of sanitary technicians free of charge (as it was subsidised by 20% by the association, and by 80% within the national apiculture programme) for hobby beekeepers, who would go and investigate sanitary problems. In Sicily, no such service was available, and the local CA stated that beekeepers were mainly professionals and did not need sanitary advice, other than those provided by the official services.

41. In 2014 and 2015, 57 and 52 cases due suspected poisoning were investigated respectively, and pesticides residues were identified in 40 and 28 cases including cases with neonicotinoids or fipronil. The laboratories do not give an interpretation of the cause of mortality, but may also perform at the same time research for pathogens.
42. The investigation of bee mortality and tests for plant protection products is offered free of charge when beekeepers report their suspicion to the veterinary services. No further official action is taken in case of positive results: the official services in charge for plant protection products are not informed, even in case of identification of prohibited substances such as neonicotinoids or fipronil<sup>4</sup>. The representative of beekeepers met did not complain about this lack of official follow-up, and would use the results to take decision on the management of location for their apiaries.

### 5.2.3 *Aethina tumida*

43. On 12 September 2014, Italy reported the presence of *Aethina tumida* in apiaries in Calabria. According to data collected by the NRL, inspections and epidemiological investigations led to identification of 60 outbreaks in Calabria, and one outbreak in Sicily (07 November) in 2014. In 2015, 33 further outbreaks were identified in Calabria between September and December 2015(of which four infested sentinel hives). Since April 2016 to the time of the mission, 2 outbreaks were identified in Calabria in sentinel hives. The 2015 and 2016 outbreaks all occurred within the same area affected in 2014 (of approximately 20 km x 30 km).
44. The official control measures included destruction of infested apiaries, treatment of the soil, epidemiological investigation to identify and control possible linked holdings, establishment of a protection zone (of 20 km around outbreaks in Calabria (with around 200 apiaries, 12,000 hives), of 10 km around the outbreak in Sicily (with 24 apiaries)) with prohibition of movements of hives, and, for Calabria, a surveillance zone of 100 km with restriction of movement of hives (prohibition of movements out of the zone).
45. The control measures were taken at regional level (Calabria: Order 94 of 19/09/2014, Sicily: Order 01893 of 10/11/2014). A national order of 19/11/2014 confirmed the request of destruction of all hives in an infested apiary, and the financial compensation of affected beekeepers.
46. In addition, Decision 2014/909/EU prohibits dispatch of bees, unprocessed apiculture by-products, beekeeping equipment and comb honey for human consumption, from Sicily and Calabria.
47. Moreover, at European level, the EU-reference laboratory organised in September 2014 a workshop on recognition, control and surveillance of *Aethina tumida*, and issued guidelines on surveillance (updated in April 2016)<sup>5</sup>. The European Food Safety

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<sup>4</sup> *In response to the draft report the CA stated that in some regions, positive results were reported to the prevention experts of local health authorities belonging to the national agricultural information system (SIAN)*

<sup>5</sup> [https://sites.anses.fr/en/system/files/Guidelines\\_SHB\\_surveillance\\_EURL\\_V2.pdf](https://sites.anses.fr/en/system/files/Guidelines_SHB_surveillance_EURL_V2.pdf)

Authority issued in March 2015 an opinion on the diagnosis and risk management of the small hive beetle<sup>6</sup>, and in December 2015 a scientific report on survival, spread and establishment of *Aethina tumida*<sup>7</sup>.

48. Surveillance measures in Italy have been coordinated by the CCA since the beginning, and developed together with the expert advice from the NRL. They have been reviewed annually as follows:

**Calabria:**

- a. Protection zone: in 2014, visual inspection of all apiaries (number of hives to be checked set to detect an infestation rate of 5% at 95% confidence interval), and traps in all hives, to be checked every week (until January 2015). From March 2015, the same surveillance was re-ordered in March. In September 2015, pairs of orphan colonies with 2 combs each were to be installed in 20 locations, and to be controlled every 10 days. In 2016, each orphan colony had to be of three combs, and pairs of colonies to be installed in 62 locations, and 53 apiaries had to be selected for clinical control (hives: detection rate 5%).
- b. Surveillance zone: in 2014, visual inspection of all apiaries (with prioritisation process) (hives: detection of 5% infestation rate), and traps in all hives, to be checked every week (until January 2015). From May 2015, 164 apiaries had to be selected for visual inspection of hives once (hives: detection of 5% infestation rate). In September 2015, 10 locations had to be selected around the protection zone for pairs of orphan colonies, to be monitored as for those in the protection zone. In 2016, 150 apiaries had to be selected for clinical control (hives: detection of 5% infestation rate).

**Sicily:**

- c. Protection zone: in 2014, visual inspection of all apiaries (hives: detection of 5% infestation rate), and traps in 75% of hives, to be checked every week for 2 months. In September 2015, pairs of orphan colonies with 2 combs each were to be installed in 3 locations, and to be controlled every 10 days; further pairs of orphan colonies were installed also in 4 locations just outside the protection zone. In 2016, each orphan colony had to be of three combs, and pairs of colonies to be installed in 29 locations.
- d. Rest of the region: In March 2015, 164 apiaries had to be clinically inspected (hives: detection of 5% infestation rate) in the three provinces most at risk, and the same number in the rest of the region. In 2016, 332 apiaries were to be checked once before the end of May<sup>8</sup>.

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<sup>6</sup> <http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2015.4048/epdf>

<sup>7</sup> <http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2015.4328/epdf>

<sup>8</sup> *In their response to the draft report the CA stated that it had been decided to delegate the responsibility of risk-based controls to the Regions, with the possibility to increase the number of checks.*

## Other regions:

- e. In 2014, all regions were requested to identify apiaries at risk (having received bees from Calabria, or with hives returning from this region). Visual inspection (hives: detection of 2% infestation rate), and traps in 75% of hives, to be checked every week (for three weeks) were ordered. Similar measures had to be performed in all apiaries involved in regional movements. In 2015, surveillance had to be split between random (with a number of apiaries set per region), for visual inspection (at onset of activity), and risk-based (returning from interregional transhumance), with visual inspection, and traps in 75% of hives, to be checked every month for 2 months. A similar plan was set for 2016, with the exception of traps.

## Observations:

49. The CCA and NRL indicated to the mission team that their plan for the future in relation to sentinel colonies would be to increase the size of the hive (to five combs) and the adjunction of a queen bee. One official laboratory was also developing a PCR method to detect *Aethina tumida* in hives, a promising method of surveillance in free regions<sup>9</sup>.
50. The 2017-2019 national apiculture plan presented by the Ministry of Agriculture to the European Commission include, within the applied research chapter, activities related to monitoring, as well as innovative diagnostic and control techniques for *Aethina tumida*<sup>10</sup>. The monitoring activities referred to those described by the Ministry of Health, but also foresaw the possibility of replacing sentinel colonies of bees by bumble bees.
51. The surveillance plan was subject to ample and detailed instructions from the CCA, information from the NRL, and monitoring from both instances. Although the evolution of surveillance is an indirect evidence of review of the system, the process leading to this review was not documented. An overall epidemiological analysis was missing (with information such as traditional routes for transhumance in Italy, review of the relative efficiency of the various components of surveillance), as well as external review of the adopted policy, the risk management and surveillance options. The LNR or the CCA were not aware of the 2017-2019 national apiculture plan chapter related to *Aethina tumida*.
52. Many meetings, training and information sessions have been organised at regional and national level for stakeholders. Letters, emails, posters in municipalities were used to reach beekeepers and inform them about their duties and the risk posed by *Aethina tumida*. In 2014, in the absence of an operational movement database, most regional competent authorities asked beekeepers and their association to notify whether their apiaries represented a risk. This is how the outbreak was identified in Sicily. A regional

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<sup>9</sup> *In their response to the draft report the CA stated that the method had been since validated and is used as a basis for clinical surveillance and that the number of combs in orphan colonies could now be increased to five.*

<sup>10</sup> *In their response to the draft report the CA indicated that a research project on monitoring and innovative techniques for diagnosis and control, Aethinet, was recently approved by the Ministry of Agriculture.*

legislation of 1995 required the introduction of apiaries from other regions to be notified to the municipality and local authorities, but was not enforced.

53. In Sicily where the mission team verified it, surveillance activities were prioritised and their performance subject to thorough documentation. Competent staff were redeployed to meet the needs. Controls were supported and reinforced by the collaboration of police forces (police, forestry guards). The beekeeper of the outbreak had three other apiaries; although he claimed that these were not transhumant, all three were subject to restriction of movement and targeted official surveillance.
54. The 2015 national surveillance report showed that all regions performed surveillance. The use of traps was inconsistent, with half of the regions not using any, whereas the other half used them for both random and risk-based surveillance. The cost of purchase of traps was a factor that made some regions not using them; in some other regions, beekeepers' associations purchased traps for their members.
55. Information in the Animal Disease Notification System (ADNS) is incomplete in relation to outbreaks: only 54 outbreaks have been reported for 2014, 19 for 2015, and none for 2016 at the time of the mission. The CCA indicated that they were unable to notify ADNS if data had not been entered into SIMAN. In Sicily, the local veterinary authorities indicated that they had problem entering data into SIMAN for the 2014 outbreak, as the module was not activated for bee diseases.
56. ADNS data regarding destruction of hives were not exhaustive, as some outbreaks appeared not to have been followed by destructions. From available information, it appears that the delay between confirmation and destruction was much longer in 2015 than in 2014, especially for the first outbreaks of the year. Dates of confirmation of outbreaks listed by the NRL do not always match with the ones in ADNS.
57. Compensation for destroyed apiaries suffered significant delays. In Calabria, no compensation was delivered to operators before September 2015. The main reason for the delay was the absence of regional funds (as according to Law No 218 of 1988, Regions are initially responsible for compensation), and the need for the CCA to find a mechanism to take over (there is no co-funding foreseen by the European Commission). In Sicily, the owner of the (2014) outbreak had not been compensated at the time of the mission: the regional authority explained that, although the compensation grid was straightforward for the loss of bee colonies, it took very long for all stakeholders to agree on the cost of destroyed equipment.
58. National beekeepers' associations complained that compensation in Calabria did not cover 100% of the agreed loss (it covered 89% of the loss – according to Law No 218, the equipment is compensated up to 80% of its value), and that the delay substantially affected the collaboration of beekeepers with the authorities, and potentially the notification of suspicions. In 2014, eight of the 32 affected beekeepers had spontaneously reported the presence of *Aethina tumida* to the local veterinary services. In 2015, all outbreaks were identified through official surveillance activities.

59. In Sicily, beekeepers' association and regional and local authorities stated that they benefited from a very good level of collaboration. This led to comprehensive registration of beekeepers into the national data-base. The CA pointed out that the complaint of the beekeepers' association regarding the movement ban from the protection zone was an indirect evidence of the good level of implementation /enforcement.
60. Long term movement prohibition for apiaries in protection zones represents a real challenge. In Sicily, beekeepers explained that their hives became non-profitable, as they could produce only limited amount of honey, and needed to be fed the rest of the year. As a consequence, they were reducing the number of colonies in the blocked apiaries. They were questioning the relevance of keeping the movement ban in place so long after the last outbreak. In Calabria, the CCA authorised in June 2015 the creation of artificial swarms for pollination, as the protection zone is an important citrus production area (and used to be an area with intense transhumance). 3,000 swarms were produced, and a further 300 recaptured swarms were moved within the Protection zone. The registration of artificial swarms is not foreseen yet, and no measures have been adopted to ensure the destruction of the swarms after pollination (these weak colonies may be very susceptible to *Aethina tumida*).
61. Although parts of the Provinces of Messina and Catania are within the 100 km zone around the outbreaks of Calabria, these parts are not subject to movement restrictions within Sicily, nor are they subject to reinforced surveillance compared to the rest of the Region. Sicily can be as close as 30 km to the 2015 outbreaks in Calabria, but the risk of spread of the beetle through its own flight over to Sicily is considered by the CA as negligible.
62. In March 2015, a beekeepers' association informed the CA about the risk that some Sicilian beekeepers were performing transhumance to Calabria, and asked to set up a control at the ferry arrival point to avoid their re-entry. The CA promptly identified two Sicilian beekeepers with hives in the Surveillance zone in Calabria. They notified them of the prohibition to bring back their hives to Sicily, and set up a protocol for them to carry in-comb honey for further processing in Sicily. Measures included refrigerated transport and storage of honey after extraction at -12°C. These mitigation measures are not legally binding or subject to specific official controls<sup>11</sup>. Two sentinel orphan nuclei were installed around the processing establishments.
63. A protocol was signed in March 2016 between regional veterinary services, the service for food quality control and the forestry corps, to reinforce the controls of movement of bee-related products through the Messina straight. The region of Sicily adopted on 06/06/2016 an act prohibiting the transfer of live bees in both directions between Sicily and Calabria, with possible derogations for pollination in Calabria (with no return).
64. The CAs have no realistic means to control movement restriction of beekeeping equipment. In Sicily, the movement restrictions in the Protection zone do not apply to

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<sup>11</sup> *In their response to the draft report the CA stated that a management protocol for honeycombs would be communicated to the Regions of Sicily and Calabria.*

bee-less hives or in-comb honey. The Calabrian regional order is not clear regarding the scope and duration of movement bans in the Protection zone: it does not specify in particular what is subject to movement ban (only hives, in-comb honey, equipment), and if the movement ban remains more than 30 days after the last notification.

#### 5.2.4 *American foulbrood*

65. A 2012 note from the CCA clarified the 1954 Presidential Decree, which required destruction of infected hives and colonies, blocking of movements of the apiary, and all apiaries within 3 km be considered as suspicious. The note stated that only clinically infected colonies should be destroyed, and the restrictions be lifted after a favourable clinical control two weeks later. Cleaning and disinfection is also foreseen: in Northern Italy, a company provides gamma rays treatment of infected equipment.
66. The 1954 Presidential Decree also foresees the possibility of curative treatment if the disease is at its initial stage. The CCA indicated in its note that no such treatment has been officially approved, and that antibiotic treatments are of limited use. Nevertheless, the CCA was of the opinion that antibiotic treatments could be prescribed by veterinarians under the “cascade” system. No compensation is foreseen, as, according to the CCA, this could create an incentive for bad bee-keeping practices.

#### Observations:

67. There is a high variation of cases reported among regions. The compilation of all cases reported in SIMAN may not be exhaustive (see point 38).
68. In Sicily, the veterinary services indicated that beekeepers, mostly professionals, would mainly deal with sanitary problems themselves, including destruction of clinically affected combs or hives.
69. The CCA is working on a project of accreditation of beekeepers who follow good practices to prevent American foulbrood, with the aim to create “low risk areas” and facilitating their movements.

#### 5.2.5 *Varroa*

70. A note from the CCA clarifies the measures to be applied in case of varroosis, according to the Ministerial order of 17/02/1995: movement ban (in and out), treatment or destruction of colonies, and clinical checks in apiaries located within 5 km of the infested apiary. These measures are to be applied in case of infestation causing serious clinical signs. In addition, the NRL issues annual guidelines for the control of *Varroa*.
71. The 2014-2016 national programme for improving the production and marketing of bee-keeping products foresees *Varroa* control measures, namely educational and field research activities, adoption of hives with mesh bases, and purchase of “appropriate health devices”. From 2017, the national programme replaced the last item by purchase of veterinary medicinal products and sterilisation of hives and equipment.

### Observations:

72. All products registered for treatment against *Varroa* can be purchased without prescription. Treatment registers in an official format were available at the apiaries visited, but in one region, the CA stated that it was difficult for them to check the effectiveness of purchase, and therefore treatment, in case of clinical infestation. Beekeepers' associations may deliver treatments. In Veneto, the beekeeper association kept records of treatment delivered, as they were subject to a 50% subsidy. In Puglia, the professional beekeeper interviewed was unaware of any subsidies for *Varroa* treatments.
73. The NRL guidelines for control of *Varroa* are of general nature: the difference between those issued in 2015 and 2016 related to an update of registered products available for treatment. The guidelines promote a regional coordination for treatment (choice of products, simultaneous treatment per zone), but this coordination was not further defined or subject to instructions or implementation rules in the regions visited by the mission team.

#### 5.2.6 Laboratory capacity

74. The CA has nominated (by Order of 13/02/2013) the *Istituto zooprofilattico sperimentale (IZS) delle Venezia* as the National Reference Centre for beekeeping. It is also the regional centre for beekeeping. It acts as National Reference Laboratory for bee diseases (providing reference material, training, support, expert opinions), and in addition embraces toxicological analysis for bees, honey quality control and residues controls in honey.
75. All IZSs may provide services for bee diseases or toxicological analyses. In case they do not have the analytical capacity, they may refer samples to the NRL.

### Observations:

76. The NRL has all methods used for notifiable bee diseases included in its scope of accreditation (ISO 17025). It participated to the proficiency tests organised by the EU reference laboratory on bee diseases (American foulbrood – including PCR: noseosis)
77. Official laboratories do not need to be accredited to offer diagnostic services for notifiable diseases. The representative of an IZS covering two regions (representing 4% of hives registered) stated that they had received 16 samples from eight analyses requests in relation to bee diseases or mortality. The NRL is not responsible for checking the performance of other IZSs.
78. Other laboratories may provide diagnostic services. The Apiculture unit of the Centre for research for agriculture and analysis of agrarian economy (a centre under the Ministry of Agriculture) also offers diagnostic services for notifiable diseases, for which it is not accredited.

### **Conclusions on bee diseases**

79. The CA of Italy had increased their focus and prioritisation of bee health prior to the introduction of *Aethina tumida*. Diagnostic capacities and technical support is available, and the applicability of standards for controls of bee diseases is subject to reviews.
80. The CA invested significant resources for the control and eradication of *Aethina tumida* in Calabria and Sicily. The major delays in compensation of destroyed apiaries in Calabria have most probably affected the grade of collaboration of beekeepers in this region. This, together with the inherent difficulties of surveillance and reporting difficulties, may lead to suspect that the situation is worse than officially reported in the restricted zone of Calabria.
81. While the CA benefitted from internal expertise and refined their approach over time, the lack of external support to analyse, and review their strategy, be it for epidemiological analysis, surveillance or controls, was a missed opportunity to challenge and improve where possible the approach taken for this new threat at European level, and to share experience gained from difficulties encountered.
82. In Sicily, the tight application of controls by well trained staff and the support from the mainly professional beekeeping community gives confidence in the favourable situation reported, where a unique outbreak was detected in 2014. Risk of re-introduction from Calabria has been only lately subject to specific mitigation measures, which still do not cover adequately the risk linked to in-comb honey. More generally, the control of movement of beekeeping equipment proves difficult to control and enforce.
83. The absence of coordination on bee health issues between the Ministry of Health, in charge of bee health and mortalities, and the Ministry of Agriculture, responsible for plant protection products, and for the national apiculture plan which includes subsidies for measures in relation to bee diseases, reduces the efficiency of efforts to tackle these issues.

## **6 OVERALL CONCLUSIONS**

The Italian authorities have invested a lot of resources to develop a comprehensive and operational control system for bee health. The system for registration of apiaries and their movements being implemented is a promising tool for surveillance and control of bee health. The application of national control measures for the main bee diseases benefits from clearer interpretation rules, but is still largely dependent on clinical expression.

The control of the small hive beetle in Calabria is uncertain, but the spill over into Sicily was effectively managed. Effective controls and support from the beekeeping industry contribute to confidence in the favourable situation in this latter region. The challenges faced by Italy, and experience gained on strategic, tactical and practical aspects for the control and eradication of the small hive beetle are hugely valuable at European level, for a better preparation and efficient early response of this exotic pest.

## **7 CLOSING MEETING**

A closing meeting was held on 17 June 2016 with representatives of the competent authorities. At this meeting the DG Health and Food Safety team presented the main findings and preliminary conclusions of the mission. The CA acknowledged the loophole regarding the movement of in-comb honey from Calabria to Sicily, and stated that they would correct it rapidly.

## ANNEX 1 – LEGAL REFERENCES

| <b>Legal Reference</b> | <b>Official Journal</b>  | <b>Title</b>   |
|------------------------|--|--|
| Reg. 852/2004          | OJ L 139, 30.4.2004, p. 1, Corrected and re-published in OJ L 226, 25.6.2004, p. 3 | Regulation (EC) No 852/2004 of the European Parliament and of the Council of 29 April 2004 on the hygiene of foodstuffs  |
| Reg. 1234/2007         | OJ L 299, 16.11.2007, p. 1-149   | Council Regulation (EC) No 1234/2007 of 22 October 2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation)  |
| Reg. 206/2010          | OJ L 73, 20.3.2010, p. 1–121   | Commission Regulation (EU) No 206/2010 of 12 March 2010 laying down lists of third countries, territories or parts thereof authorised for the introduction into the European Union of certain animals and fresh meat and the veterinary certification requirements |
| Dec. 2014/909/EU       | OJ L 359, 16.12.2014, p. 161–163   | 2014/909/EU: Commission Implementing Decision of 12 December 2014 concerning certain protective measures with regard to confirmed occurrences of the small hive beetle in Italy  |