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Background/Purpose

Honey bee diseases and their control measures significantly impact managed colonies, beekeepers and the broader sector, with potential consequences for agriculture, food safety, and biodiversity. To ensure high animal health standards, the EU implemented Regulation (EU) 2016/429 on transmissible animal diseases ('Animal Health Law') is applied since 2021, alongside CDR (EU) 2018/1629 and CIR (EU) 2018/1882.

Problem Description

Honey bee disease are classified under EU regulations as follow: varroosis (Category C, D and E); *Aethina tumida* (Small hive beetle, SHB) infestation, American foulbrood, and *Tropilaelaps* spp. infestation (Categories D and E). While *Aethina tumida* is present in Calabria and Sicily, regions of southern Italy, it remains exotic to the rest of the EU.

Methodology

Historically, the approach to honey bee diseases focused on their eradication, especially for exotic pathogens. Over time, this strategy evolved into one directed at containment, management and surveillance.

RESULTS: Between 2014 and 2019, eradication measures for SHB were implemented, transitioning later to a containment approach that stabilized coexistence with the pest in two Calabria provinces. This strategy was also applied after the parasite's re-emergence in northeastern Sicily, five years after the last reported outbreak. In alignment with the Animal Health Law, Italian regulation mandates a 30 km protection zone around the SHB-infested apiaries, prohibiting honey bee movements beyond this area. Furthermore, the EU Commission has placed the entire Sicily region under emergency measures (CID 2024/3119/EU).

CONCLUSIONS: Articles 10 (Responsibilities for animal health and biosecurity), 124 (General movement requirements for kept terrestrial animals), and 125 (Disease prevention measures in transport) of Regulation (EU) 2016/429 outline beekeepers' responsibilities for safeguarding colony health and implementing biosecurity measures to ensure the safe movement of honey bees.

Practical Implications for Beekeepers

Small hive beetle infestation can be controlled and managed without the mandatory destruction of infested colonies. However, under the current emergency measures in Sicily, the export of queen bees from the region to EU and international markets is prohibited.

Impact of EU regulation on Honey Bee Health: the case of *Aethina tumida* in Italy

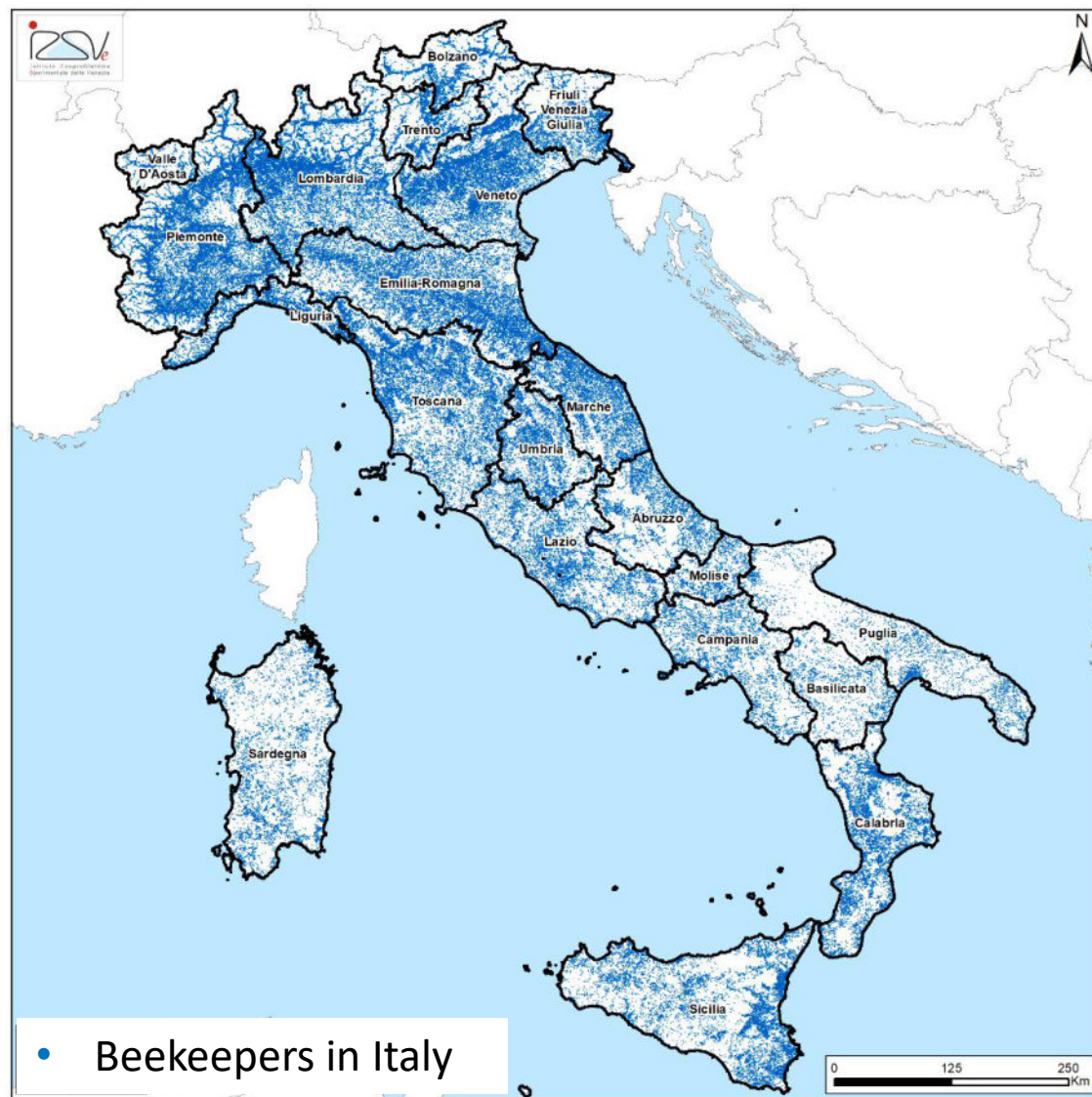
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I&R system for beekeeping in Italy



In case of a disease outbreak: the census of apiaries and colonies must be updated and available!



Background/Purpose

- Honey bee diseases and their control measures significantly impact managed colonies, beekeepers and the broader sector, with potential consequences for agriculture, food safety, and biodiversity.
- To ensure high animal health standards, the Regulation (EU) 2016/429 on transmissible animal diseases ('Animal Health Law') is applied since 2021, alongside CDR (EU) 2018/1629 and CIR (EU) 2018/1882.



31.10.2018

EN

Official Journal of the European Union

L 272/11

COMMISSION DELEGATED REGULATION (EU) 2018/1629

of 25 July 2018

amending the list of diseases set out in Annex II to Regulation (EU) 2016/429 of the European Parliament and of the Council on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law')

'ANNEX II

LIST OF ANIMAL DISEASES

- Infestation with *Varroa* spp. (Varroosis)
- Infestation with *Aethina tumida* (Small hive beetle)
- American foulbrood
- Infestation with *Tropilaelaps* spp.



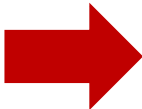
While *Aethina tumida* is present in Calabria and Sicily, regions of southern Italy, it remains exotic to the rest of the EU



COMMISSION IMPLEMENTING REGULATION (EU) 2018/1882

of 3 December 2018

on the application of certain disease prevention and control rules to categories of listed diseases and establishing a list of species and groups of species posing a considerable risk for the spread of those listed diseases



Name of listed disease	Category of listed disease	
		Species and group of species
Infestation with <i>Varroa</i> spp. (Varroosis)	C+D+E	Apis
Infestation with <i>Aethina tumida</i> (Small hive beetle)	D+E	Apis, <i>Bombus</i> ssp.
American foulbrood	D+E	Apis
Infestation with <i>Tropilaelaps</i> spp.	D+E	Apis



Legislation on animal health

31.3.2016

EN

Official Journal of the European Union

L 84/1

I

(Legislative acts)

REGULATIONS

REGULATION (EU) 2016/429 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 9 March 2016

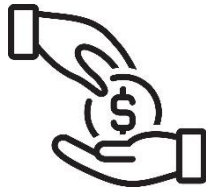
on transmissible animal diseases and amending and repealing certain acts in the area of animal health ('Animal Health Law')

Category D: These are **notifiable** diseases for which measures are needed to **prevent their spread** due to introduction into the Union or movements between Member States

Category E: These are notifiable diseases that require **surveillance** within the Union

● Animal Health Law: Reg. (UE) 2016/429

Eradication and/or
selective stamping out
(until 2022) +
compensation



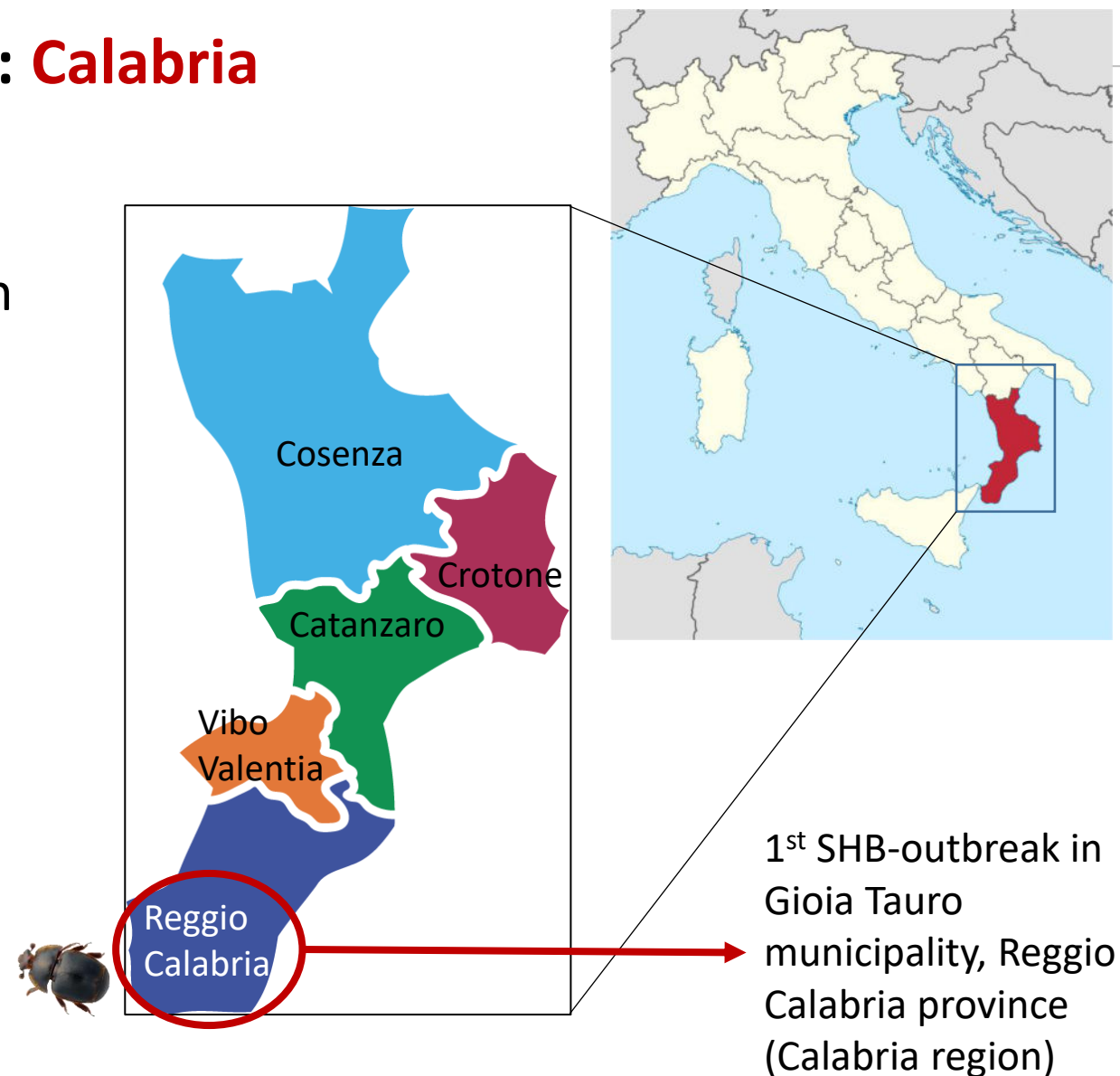
Animal Health Law in force

Surveillance +
prevention of spreading



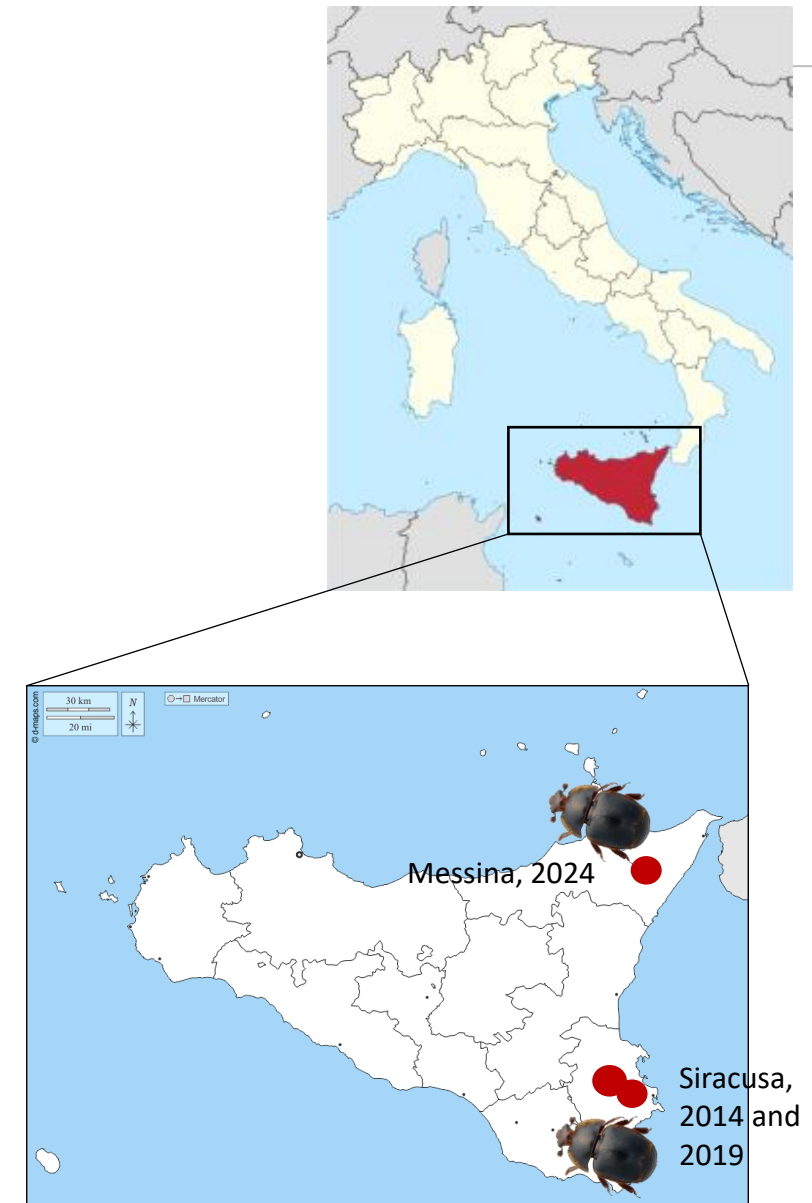
● Small Hive Beetle detection in Italy: **Calabria**

- 5 September 2014:
 - SHB were detected, for the **first time** in Europe, in Calabria region – Italy
- September-December 2014:
 - SHB **spreading** throughout Reggio Calabria Vibo Valentia provinces
- Since 2017, SHB has been **constantly reported** in Reggio Calabria province



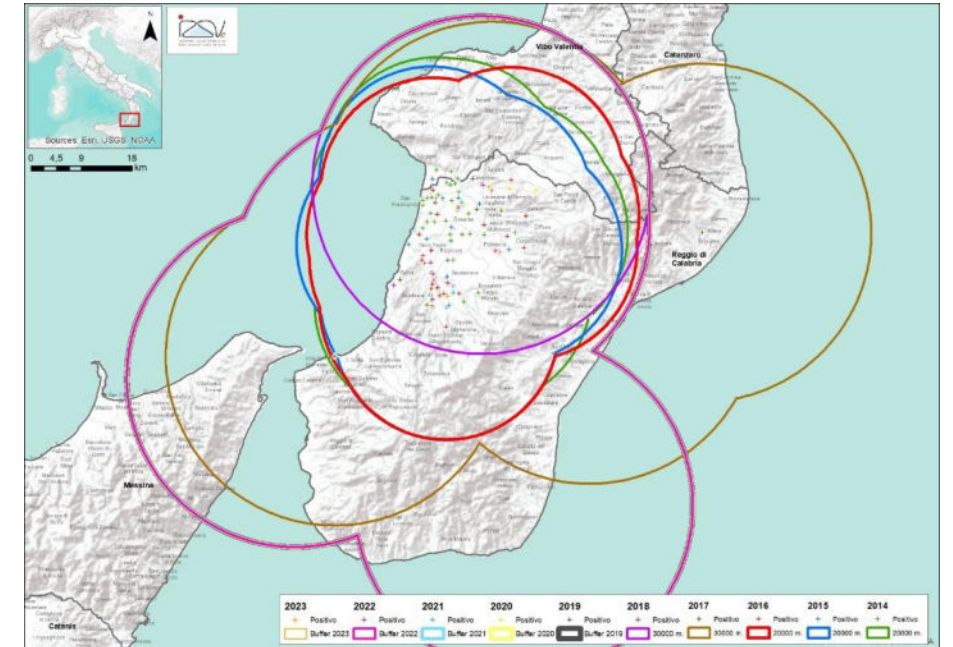
● Small Hive Beetle detection in Italy: **Sicily**

- 7 November **2014**:
 - SHB was first confirmed in Sicily, Siracusa province (a single adult)
 - Prompt eradication of entire apiaries (8 November 2014)
- 20 June **2019**:
 - Second outbreak of SHB occurred in Siracusa province (two adults)
 - Eradication of apiaries within two days
- 9 October-December **2024**:
 - Third SHB outbreak of SHB (Messina province):
 - 11 positive apiaries
 - **Still ongoing...**



● Early reaction measures in Calabria and Sicily regions

- **Early surveillance activities:**
 - Establishment/enforcement of protection (20 km radius) and surveillance zones (10 km radius);
 - Active surveillance: in 2014 and 2015: compulsory visits to all apiaries in the protection zone;
- **Movement restriction** of the concerned colonies and apiaries (IN and OUT);
- **Eradication/Destruction** of infested apiaries (even a few beetles in one hive trigger the destruction of the entire apiary), followed by ploughing and pyrethroid treatment of the surrounding soil (possibility of compensation);
- **Sentinel nuclei** positioning



Comparison of SHB **protection zones** in Calabria from 2014 to 2023

● **Compensation** to beekeepers following application of eradication/containment measures

- For the first time, beekeepers were awarded recognized compensation from the Italian Ministry of Health (MoH 2014, Italian Law N. 218/1988, Ministerial Decree N. 298/1989);
- Beekeepers reporting certified SHB detection by Veterinary Services received an average of **350.00 euros per culled colony** (3.2 million euros);
- This compensation covered the current **commercial value** of the colony; hive, brood combs, supers, honeycomb, and any honey present.

The law did not provide compensation for production losses or the loss of queen genetics

● Sentinel nuclei

- **Early warning method**
- Effective in detecting SHB and providing additional information on SHB circulation alongside beekeepers' reports
- Five-frame colonies
- Placed within the protection zone and at the border between protection and surveillance zones
- Under Veterinary Services' direct control
- Visually inspected every 15 to 20 days



● SHB control (and eradication) measures in Italy

National surveillance
program for SHB



Surveillance program for
SHB in Calabria region

Surveillance program for
SHB Sicily region

- ✓ **Measures created for the Italian context** (i.e., traditional migratory movements between Calabria and Sicily)
- ✓ **Measures** have been continuously **adjusted** in response to the evolving **epidemiological situation** shifting the strategy from eradication to containment

● National Surveillance Program for SHB

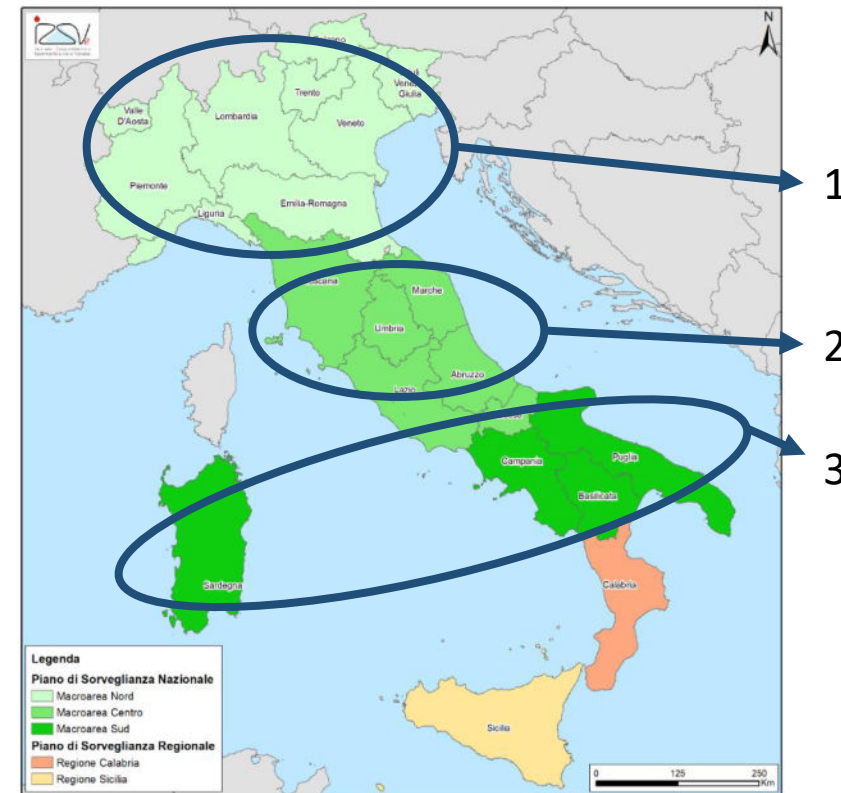
Randomized Clinical Inspections on **Non-Migratory Apiaries** (Stratified Random Sampling):

- Italy is divided into **3 macro-regions**
- Number of **apiaries** to be inspected: based on 2% expected prevalence and 95% confidence interval (CI)
- Number of **hives** to be inspected within each apiary: based on 5% expected prevalence and 95% CI

Targeted Clinical Inspections on **Apiaries Considered at Risk**, Based on Specific Epidemiological Criteria:

Apiaries and hives to be inspected: based on 5% expected prevalence and 95% confidence interval (CI)

- Migratory beekeeping outside the region or autonomous province;
- Receipt of biological material (queens, bee packages, etc.) from other regions or autonomous provinces;
- Ownership of multiple stationary apiaries located in different regions or autonomous provinces;
- Other specific epidemiological, territorial, or production-related risk criteria;
- Presence of honey extraction facilities that receive supers from areas outside the region.



● National Surveillance Program for SHB



Map of national surveillance program for SHB based on **non-migratory apiaries** (randomly selected)

Random Clinical Inspections on Non-Migratory Apiaries

Each region is assigned a certain number of apiaries to be inspected for Small Hive Beetle (SHB) based on the National Beekeeping Registry (in spring)



Map of national surveillance program for SHB based on **migratory apiaries** (risk-based program)

Targeted Clinical Inspections on At-Risk Apiaries

Each region must identify migratory apiaries to be inspected for SHB once they have returned to their main operating site (in September–October)

To date: No outbreaks have been reported outside the two affected regions

● Surveillance program for SHB in **Calabria** and **Sicily** region



	Details	Calabria	Sicily
Protection Zone	Covered provinces	Reggio Calabria and Vibo Valentia	Messina
	Apiaries to be inspected (prevalence; confidence interval)	50% ; 95%	30% ; 95%
Surveillance Zone	Covered provinces	Catanzaro, Crotone, and Cosenza	Agrigento, Caltanissetta, Catania, Enna, Palermo, Ragusa, Siracusa e Trapani
	Apiaries to be inspected (prevalence; confidence interval)	2% ; 95%	2% ; 95%
Sentinel nuclei		yes	yes



COMMISSION IMPLEMENTING DECISION (EU) 2023/110

of 12 January 2023

laying down emergency measures as regards confirmed cases of infestation with small hive beetle (*Aethina tumida*) in Italy and France and repealing Implementing Decision (EU) 2021/597

ANNEX

List of Member States or zones thereof subject to emergency measures referred to in Article 2(1)

Member State	Zones subject to emergency measures
France	Department of Reunion
Italy	Region of Calabria: whole Region

2024/3119

18.12.2024

COMMISSION IMPLEMENTING DECISION (EU) 2024/3119

of 16 December 2024

amending Implementing Decision (EU) 2023/110 by prolonging the period of application of emergency measures regarding confirmed cases of infestation with the small hive beetle in France and Italy and by adding the Region of Sicily in Italy to the Annex thereof as a zone subject to emergency measures

(notified under document C(2024) 8783)

(Only the French and Italian texts are authentic)

ANNEX

List of Member States or zones thereof subject to emergency measures referred to in Article 2(1)

Member State	Zones subject to emergency measures
France	Department of La Réunion
Italy	Region of Calabria: whole Region Region of Sicily: whole Region

ONLY Calabria and Sicilia regions are subject to emergency measures



Conclusions

Regulation (EU) 2016/429 outline beekeepers' responsibilities for safeguarding colony health and implementing biosecurity measures to ensure the safe movement of honey bees:

- Article 10 - Responsibilities for animal health and biosecurity measures
- Article 24 - Operators' surveillance obligation
- Article 124 - General requirements for movements of kept terrestrial animals
- Article 125 - Disease prevention measures in relation to transport
- Article 257 - Emergency measures to be taken by the competent authority of the Member State in the territory of which an outbreak of a listed disease or emerging disease, or a hazard occurred

● Practical Implications for Beekeepers

- Small hive beetle infestation can be controlled and managed without the mandatory destruction of infested colonies.
- However, under the current emergency measures in Calabria as well as in Sicily, the exchange and export of queen bees from the concerned regions to EU and third countries is not permitted.



● Impact of SHB on beekeeping



Between 2014 and 2024, 6,139 apiaries were inspected in Calabria, with 164 culled, while no SHB outbreaks were recorded in the 4,597 apiaries screened outside Calabria and Sicily.



As of June 2024, the National Beekeeping Registry reported 186,467 colonies managed by 2,149 beekeepers in Calabria region, more than double the 85,000 colonies recorded in 2014. Calabria alone accounts for 8.7% of Italy's managed colonies, ranking third among Italian regions.

Thank you for your attention



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