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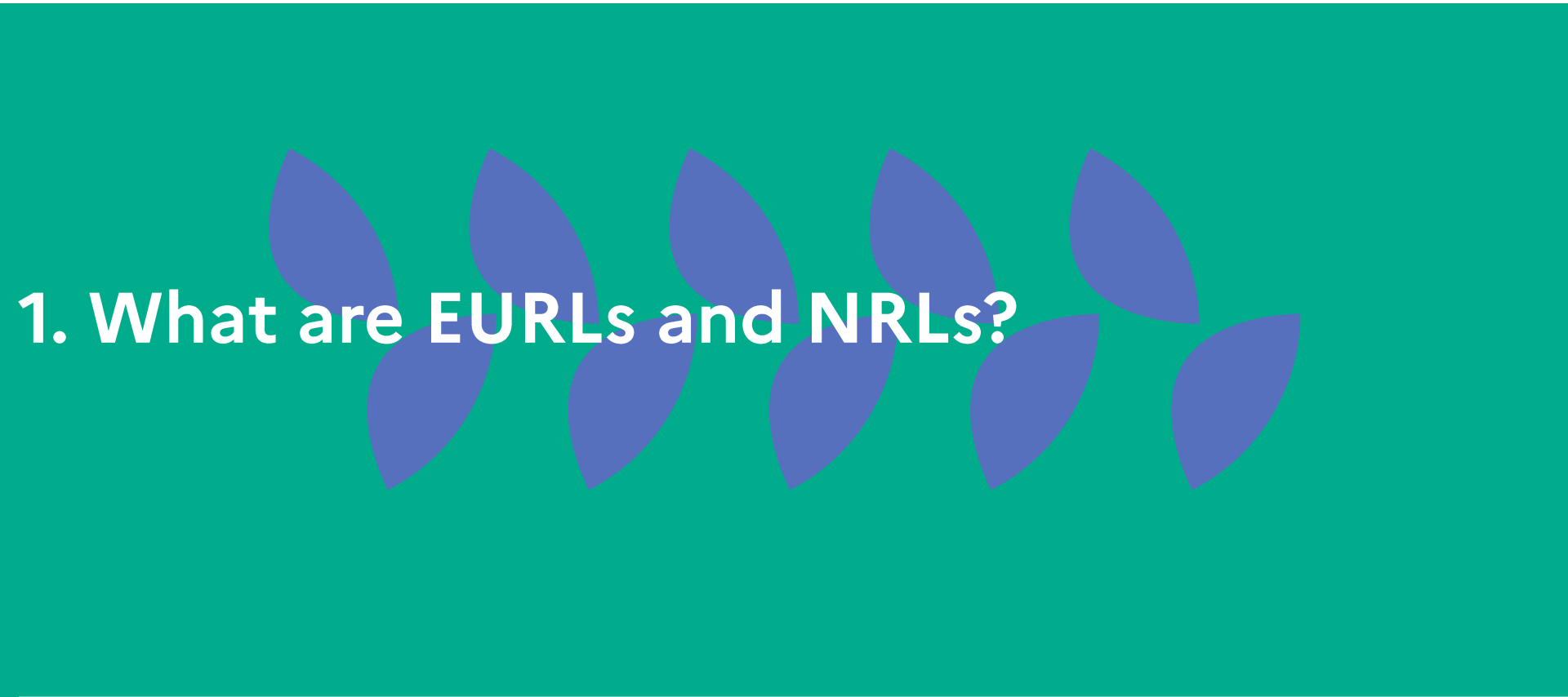
Exotic diseases affecting honeybees are a threat to beekeeping. Being able to detect and control exotic diseases is essential to protect beekeeping across the EU. American Foulbrood (AFB), the infestations with *Aethina tumida*, *Tropilaelaps* spp. and *Varroa* spp. are diseases subject to measures of prevention and surveillance by the European Union (EU) Animal Health Law. The Small Hive Beetle (*A. tumida*) was detected in 2014 in Calabria (Italy) and more recently in 2022 in Réunion Island (France). *Tropilaelaps* spp. mites were detected in Russian provinces (in 2021 and 2024), in Uzbekistan (2022) and Georgia (2024). This rapid spread across continents threatens European honeybee health and raises concerns. Besides exotic diseases, AFB control is also fundamental to manage outbreaks. Early detection is a key step, consequently official laboratories must be ready to rapidly perform analyses.

By law, European Union Reference Laboratories (EURLs) contribute to the improvement and harmonisation of analytical methods to be used by official laboratories. Since its designation in 2011, the EURL for Bee Health has regularly used questionnaire-based surveys to record the analytical capabilities of the national reference laboratories (NRLs) network and to follow the development of competencies.

Over the years, NRLs and the EURL organised inter-laboratory tests on various diseases at national and European levels. During these tests, laboratories perform analyses on the same or similar samples and report results which are evaluated to assess their competency. By participating in and organising tests, NRLs respectively show their capabilities to perform reliable diagnostics and to implement and harmonise diagnostic methods in their national laboratory networks. In 2023, the answers to the questionnaire on 2021-2022 activities showed the capability of all the NRLs to identify *A. tumida* and *Tropilaelaps* spp. mites, to detect and evaluate infestation level of *Varroa* spp. mites and to diagnose AFB on larvae in case of outbreaks (using the EURL's or the World Organisation of Animal Health methods). Since 2011 the network gained competency and is ready to diagnose diseases. Subsequent measures to prevent the spread of diseases are based on these early diagnostics to protect bees and beekeeping in Europe.

THE EUROPEAN UNION NATIONAL REFERENCE LABORATORIES ARE READY TO DIAGNOSE DISEASES AND PROTECT BEEKEEPING

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1. What are EURLs and NRLs?

EURLs

(European Union Reference Laboratories)



Contribute to improvement and harmonisation
of diagnostic methods

EURLs

(European Union Reference Laboratories)



🎯 Contribute to improvement and harmonisation of diagnostic methods



The EU NRLs network

(National Reference Laboratories)



🎯 Contribute to improvement and harmonisation of diagnostic methods of **the national network**

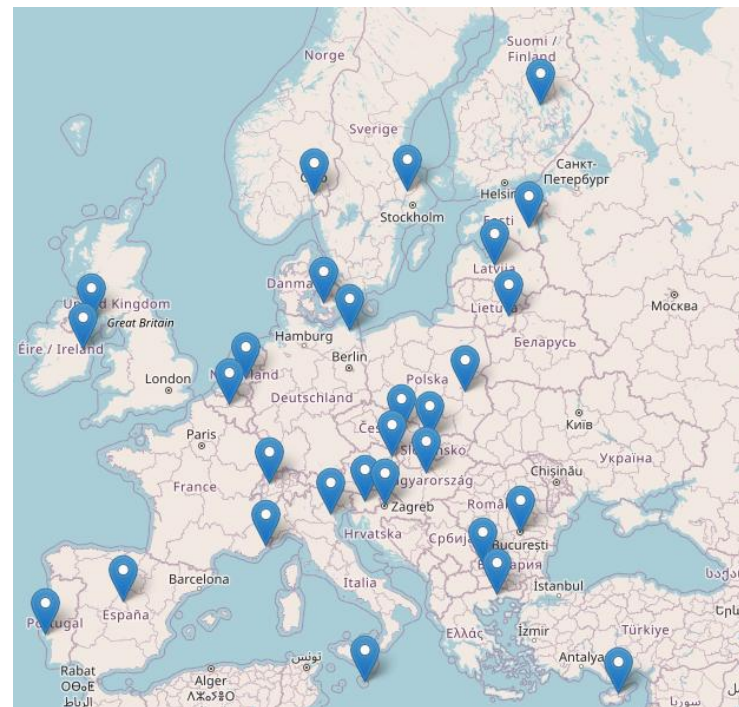


[Responsibilities and tasks of EURLs and NRLs:](#)

Commission Regulation (EU) 2017/625

Commission Regulation (EU) 415/2013

The EU NRL network



2011

designation

25

EU NRLs

4

Listed diseases

2. The listed diseases in the EU

Diseases subject to measures of prevention and surveillance*

American foulbrood



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Infestation with
Varroa spp.



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Infestation with
A. tumida



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Infestation with
Tropilaelaps spp.



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*Animal Health Law 2016/429
Categorisation of diseases: Regulation (EU) 2018/1182

Diseases subject to measures of prevention and surveillance*

American foulbrood



© Anses

→ AFB control is fundamental to manage outbreaks

Infestation with *Varroa* spp.



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→ Prevention from spreading to territories free of *Varroa* spp.

Infestation with *A. tumida*



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Infestation with *Tropilaelaps* spp.



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*Animal Health Law 2016/429
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Diseases subject to measures of prevention and surveillance*

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→ AFB control is fundamental to manage outbreaks

Infestation with *Varroa* spp.



© Anses

→ Prevention from spreading to territories free of *Varroa* spp.

Infestation with *A. tumida*



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Infestation with *Tropilaelaps* spp.



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Exotic diseases → risk of introduction

*Animal Health Law 2016/429
Categorisation of diseases: Regulation (EU) 2018/1182

Distribution of *A. tumida* in Europe



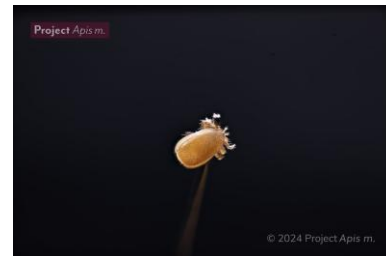
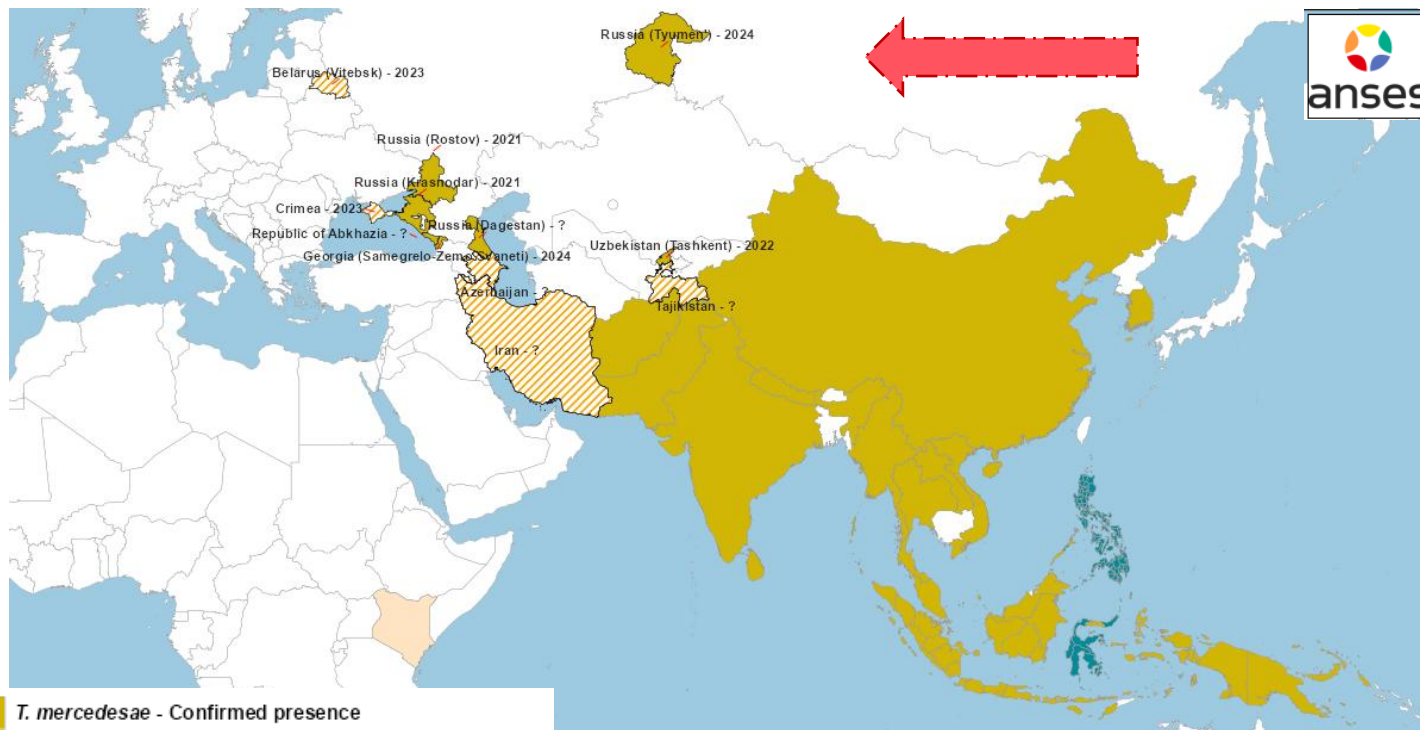
Since 2014 in Calabria region and Sicily



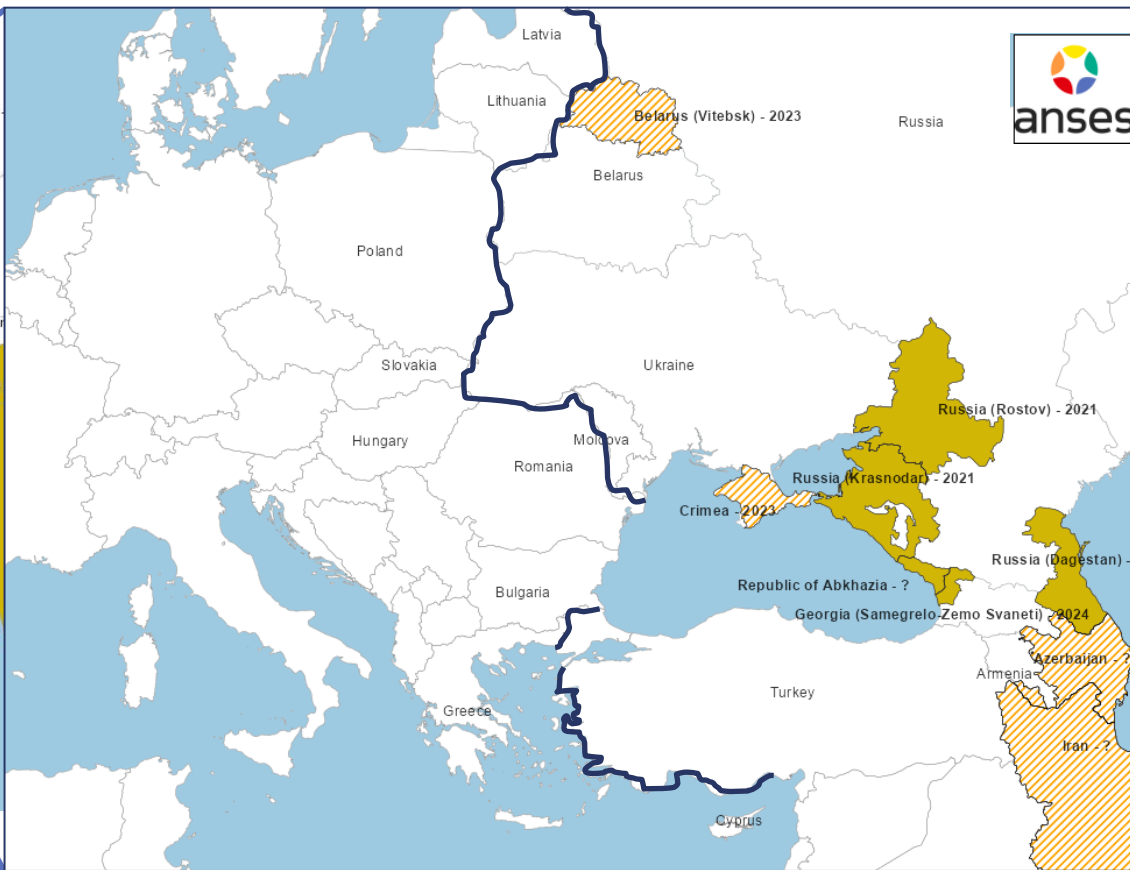
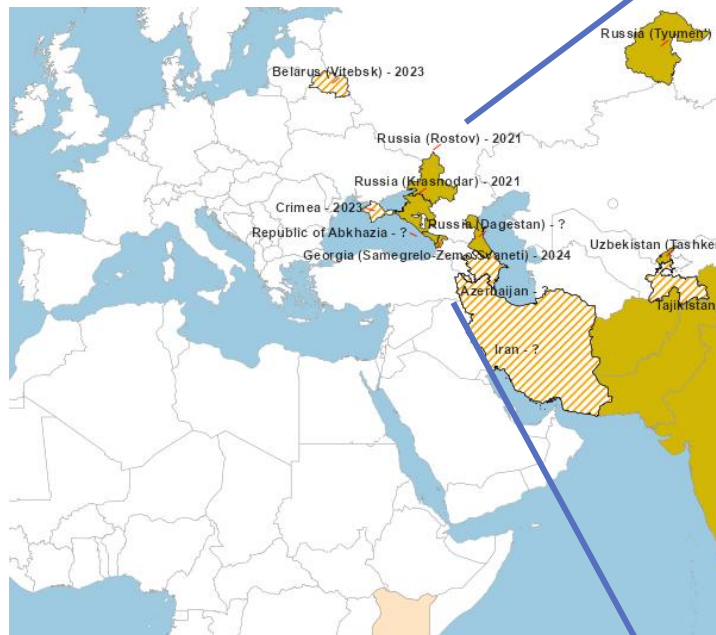
Since 2022 in La Reunion French island



Worldwide distribution of *Tropilaelaps* spp.



Getting closer to Europe



- T. mercedesae* - Confirmed presence
T. mercedesae - Reported cases but mite not established
T. clareae - Confirmed presence
Tropilaelaps spp. - Suspected presence
 No detection or no information

Country/region where it has been recently suspected/detected and year

3. What happens in case of suspicion?

Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence

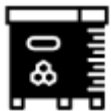
Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence



Notification
to competent
authority

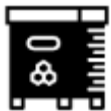
Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence

Notification
to competent
authority

Field inspection
and sampling



Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence

Notification
to competent
authority

Field inspection
and sampling



Diagnosis by
the NRL



Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence



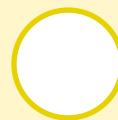
Notification
to competent
authority



Field inspection
and sampling



Diagnosis by
the NRL



Confirmation by the EURL
& notification to the EC



Detection of an exotic disease



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Suspicion of *A. tumida* or
Tropilaelaps spp. presence

Notification
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Field inspection
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Diagnosis by
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Confirmation by the EURL
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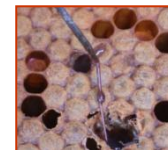
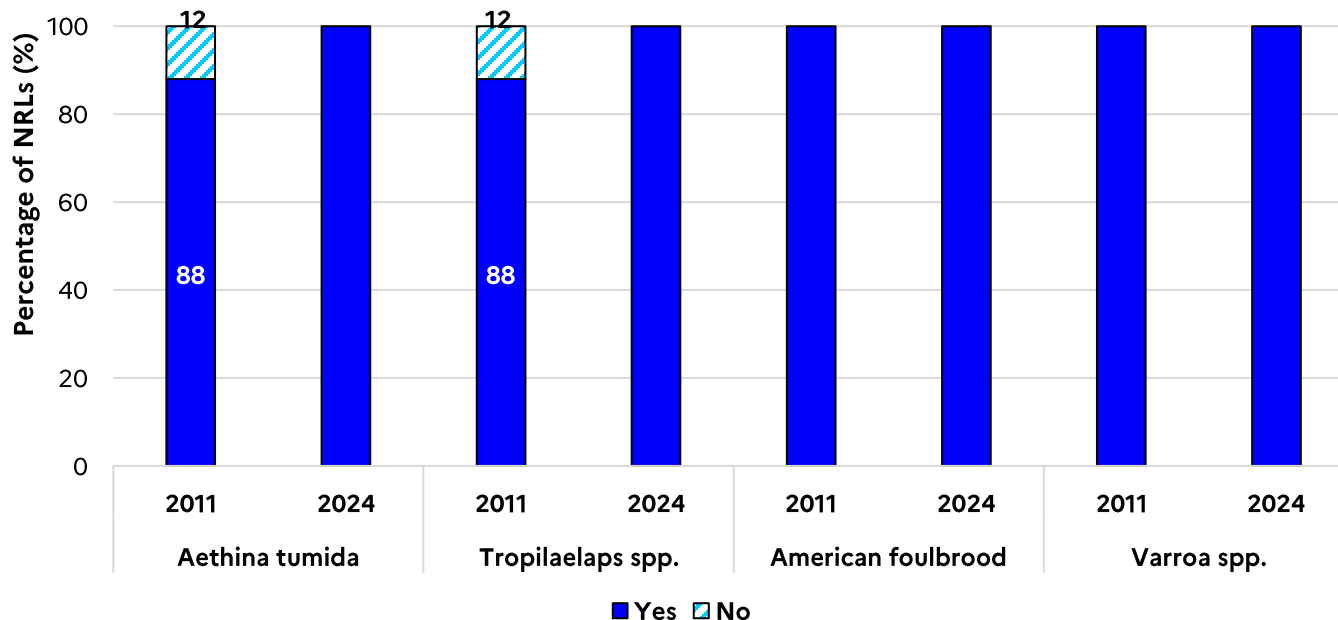
Early detection is key.

4. Diagnostic capabilities of the EU NRL network



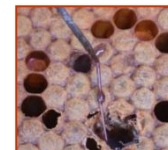
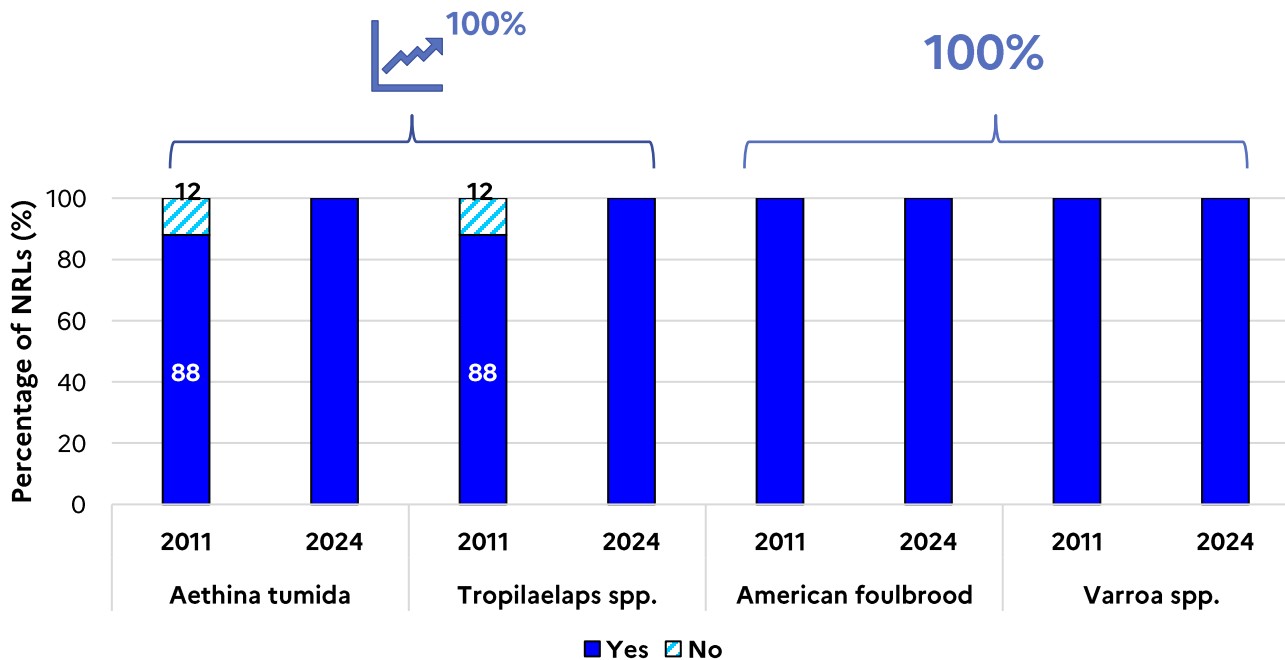


Regular online questionnaire to record information



Evolution of diagnostic capabilities for the listed diseases

Evolution of diagnostic capabilities of the EU NRL network



Evolution of diagnostic capabilities for the listed diseases

Responsibilities of the NRLs

⊕ Continue to gain in competency:

- Participation in and organisation of inter-laboratory proficiency tests
- Accreditations of methods



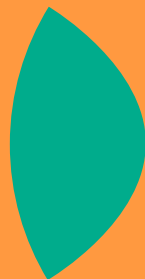
Responsibilities of the EURL

⊕ Contribute to improvement and harmonisation of diagnostic methods:

- Organisation of inter-laboratory proficiency tests
- Provides methods of diagnostics (100% of NRLs use EURL methods for exotic diseases)



Conclusion

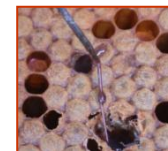


The network is ready to diagnose listed diseases

The network of NRLs for Bee Health continue to gain in competency since 2011.

The EURL support improvement and harmonisation of methods.

Vigilance of all actors to prevent spread of diseases.



Early detection is key in case of introduction.



<https://eurl-bee.anses.fr/>

Thank you to the EU NRLs for Bee Health for their continuous participation in all activities, their work and dedication.



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Thank you for your attention !