

## **OP-097 [Bee Health]**

### **Official Monitoring of American Foulbrood in Saxony 2019 - 2023**

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American foulbrood (AFB) is a notifiable disease, listed in EU directive 2018/1882. Over recent years, outbreaks of AFB have been consistently recorded in Saxony, though at a low rate. In 2019, an official monitoring system was established to detect early stages of colony infections before clinical symptoms of infection are apparent and thereby reduce the costs caused by restrictions on the movement of colonies following an AFB infection.

Every year, approximately a quarter of the registered hives of Saxony was tested for AFB, including honey from the brood nest or winter hive debris. Material from up to 12 samples (colonies) was pooled. Samples were investigated for *Paenibacillus* larvae according to the methods published by the Federal Research Institute for Animal Health, the Friedrich-Loeffler-Institut (FLI).

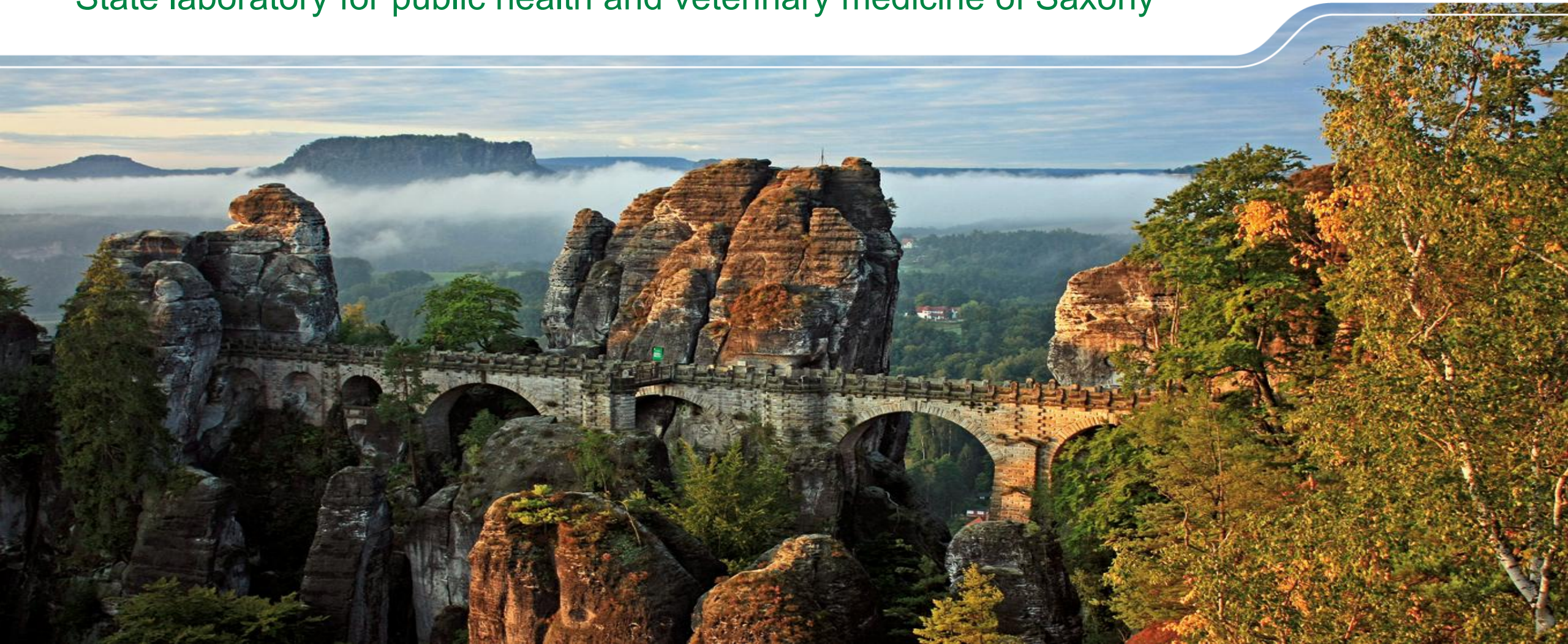
In total, 8146 samples from 6373 beekeepers were examined. In the first year, 3.1% of the apiaries were positive for *P.* larvae. The rate dropped during the monitoring period to 1.2% in 2023. The *P.* larvae positive samples were classified according to colony forming units (cfu).

Across the monitoring period 2019-2023, positive samples were less frequently detected. Furthermore, the number of cfu per sample was reduced. Monitoring offers the opportunity to detect infections with *P.* larvae before colonies show clinical symptoms of the disease, whereupon measures can be taken to prevent the establishment of the disease.

# Official Monitoring of American Foulbrood in Saxony

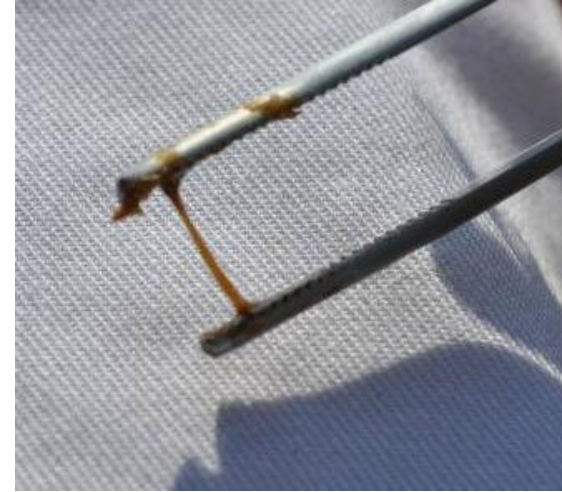
Dr. Michael Hardt

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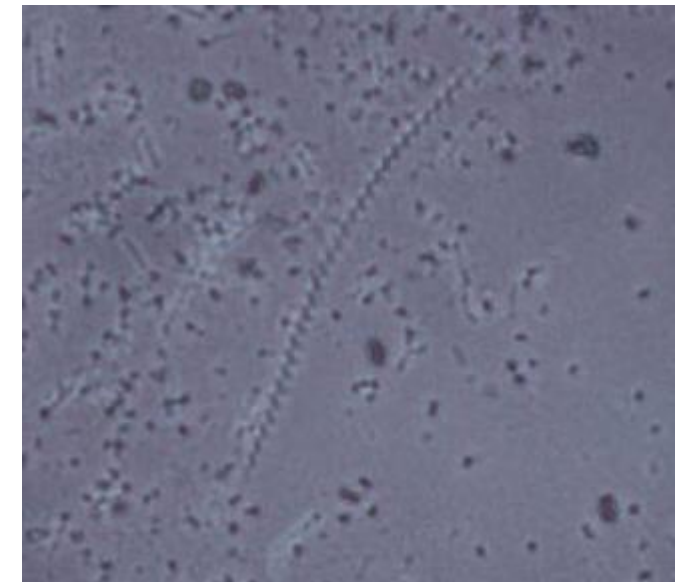


# Symptoms and diagnostic of American Foulbrood

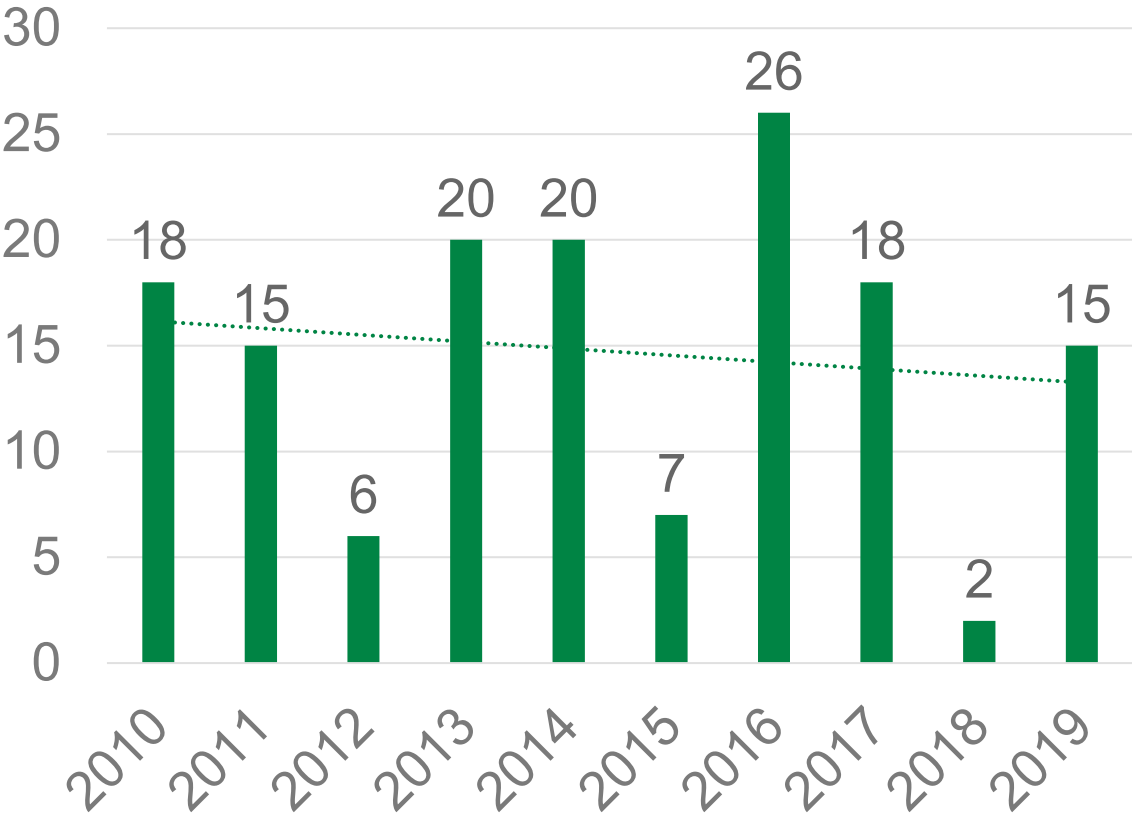
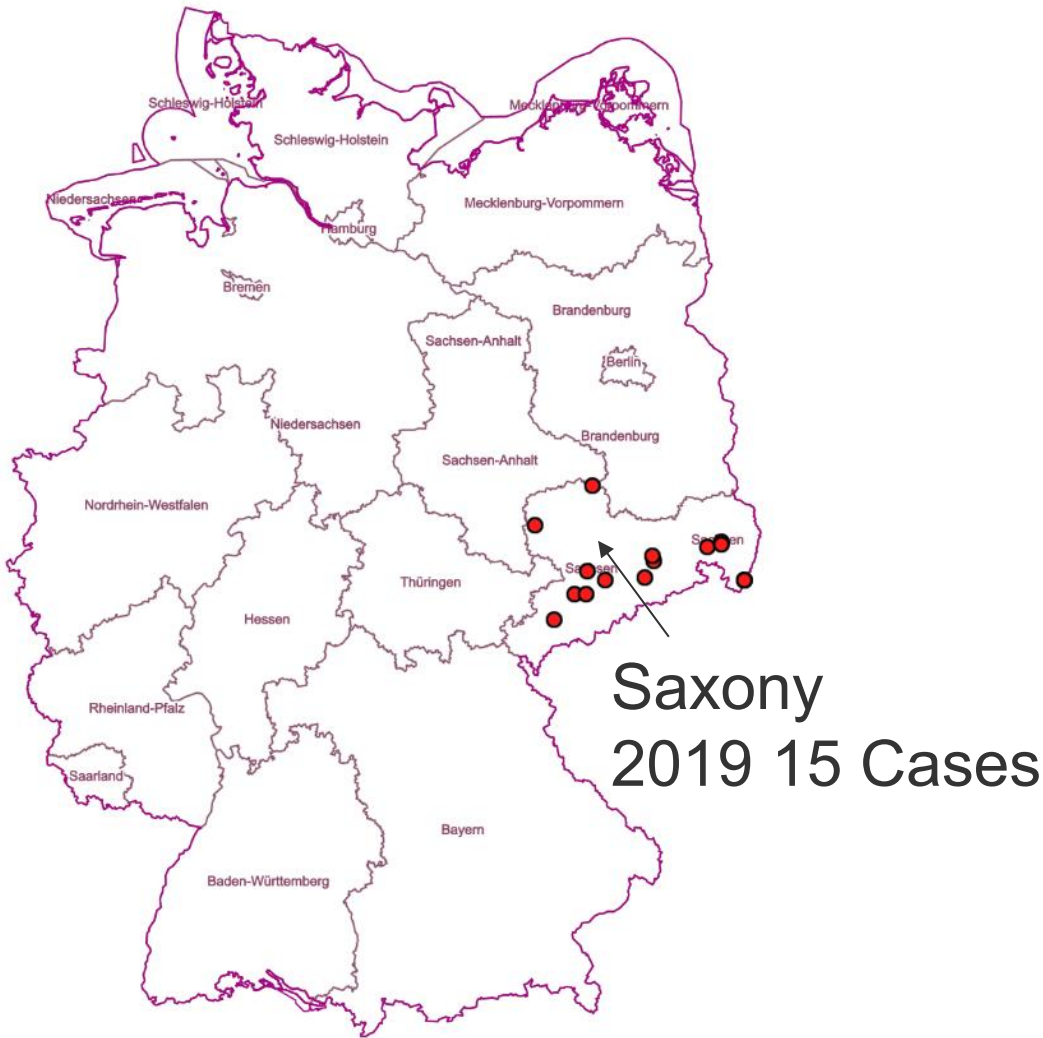
LANDESUNTERSUCHUNGS-  
ANSTALT FÜR DAS GESUNDHEITS-  
UND VETERINÄRWESEN



- | 1. mottled appearance of brood
- | 2. Diseased larvae
- | 3. Ropy thread appearance
- | 4. Culture of *Paenibacillus* larvae
- | 5. Microscopy of *Paenibacillus* larvae flagellar bundles



# Outbreaks of American Foulbrood in Saxony



## Goals of AFB-Monitoring

- ☐ Comprehensive testing for AFB in Saxony
  - ☐ Overview of AFB spread in Saxony
  - ☐ Identification of unknown outbreaks
  - ☐ Limiting the spread of pathogens
  - ☐ Reducing testing/remediation and compensation costs

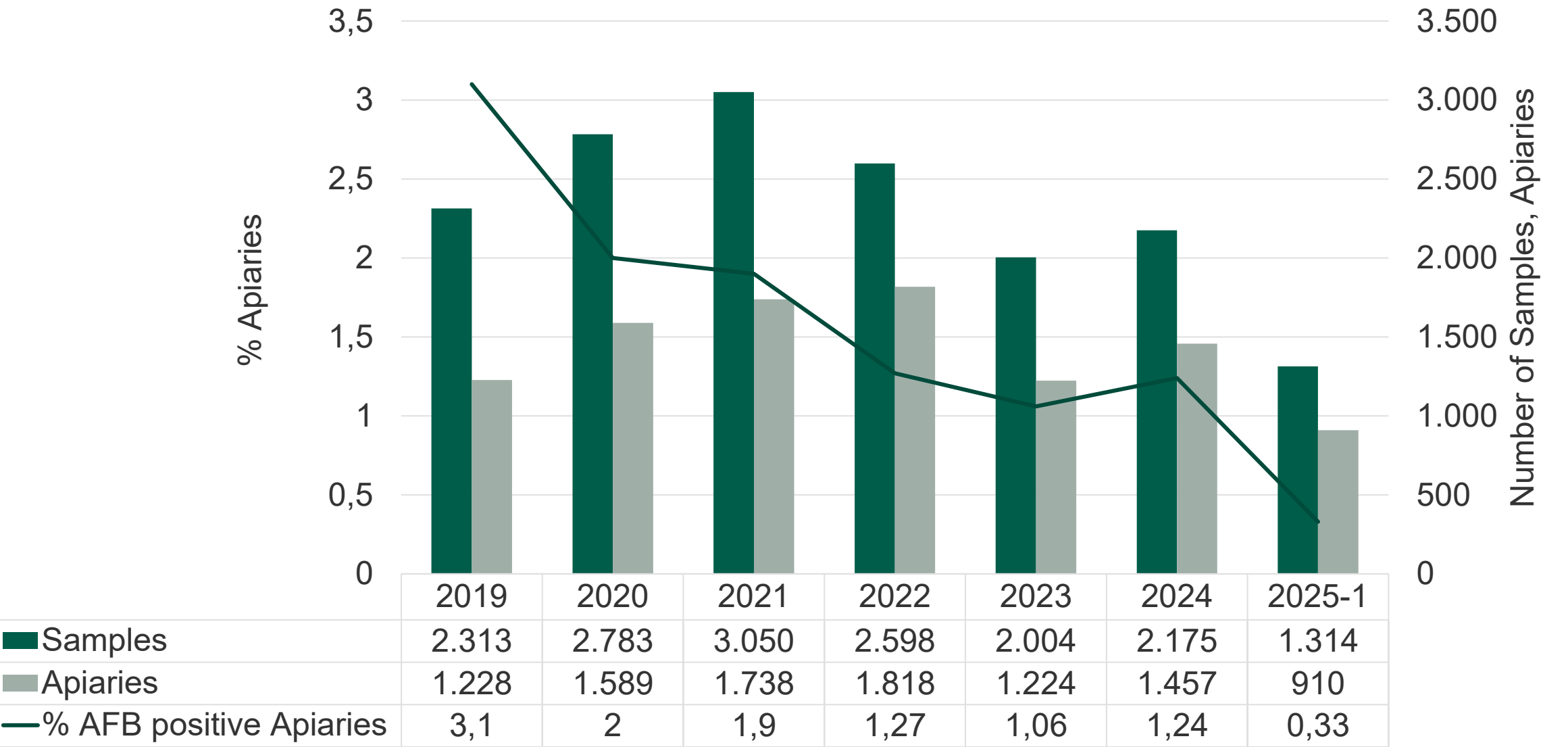


# Sampling

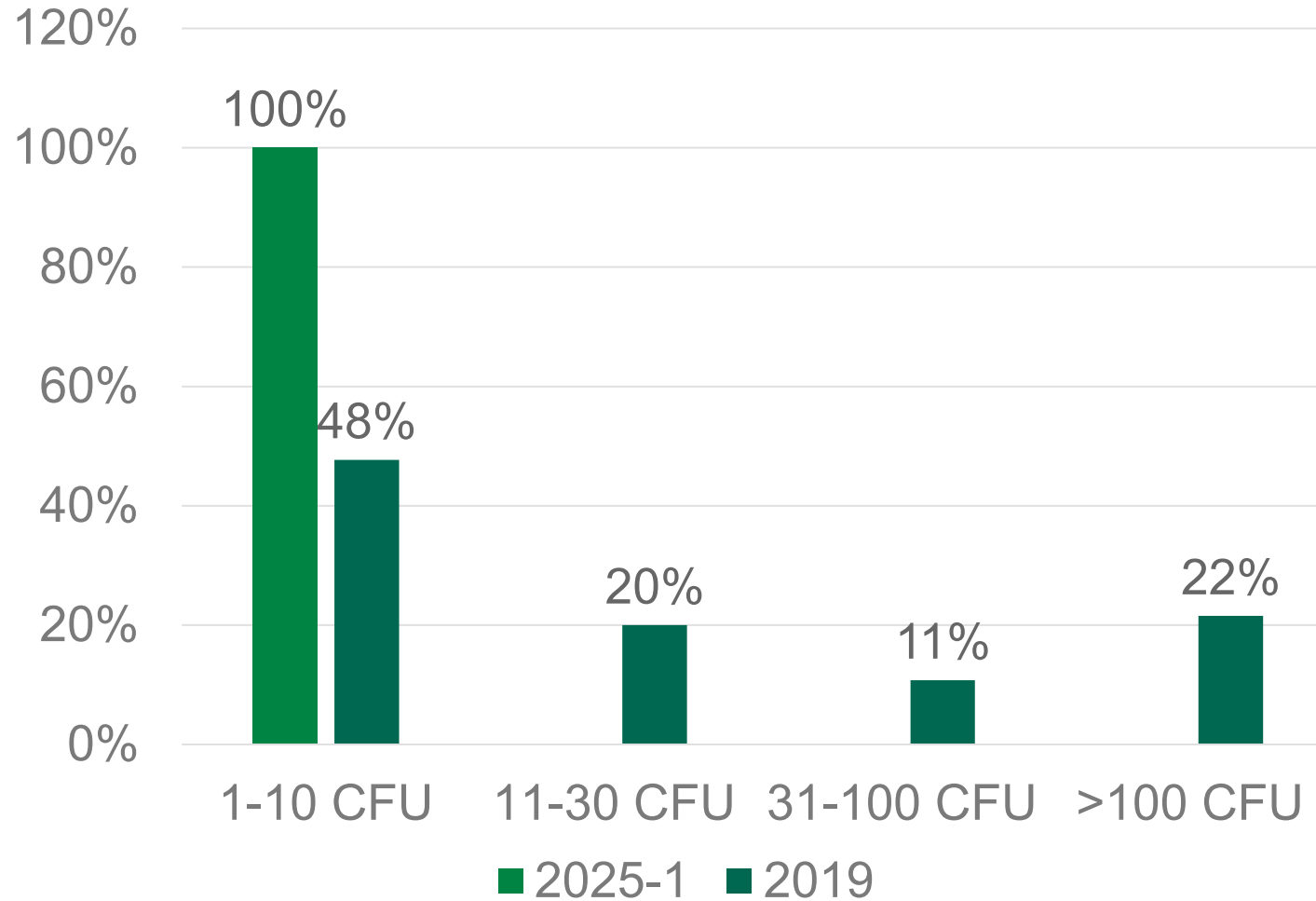


Food storage or debris of combs can be used  
Pooling up to 12 colonies  
Sampling by official health inspector

# Results Official Monitoring AFB



# Quantitative analysis of positive results:



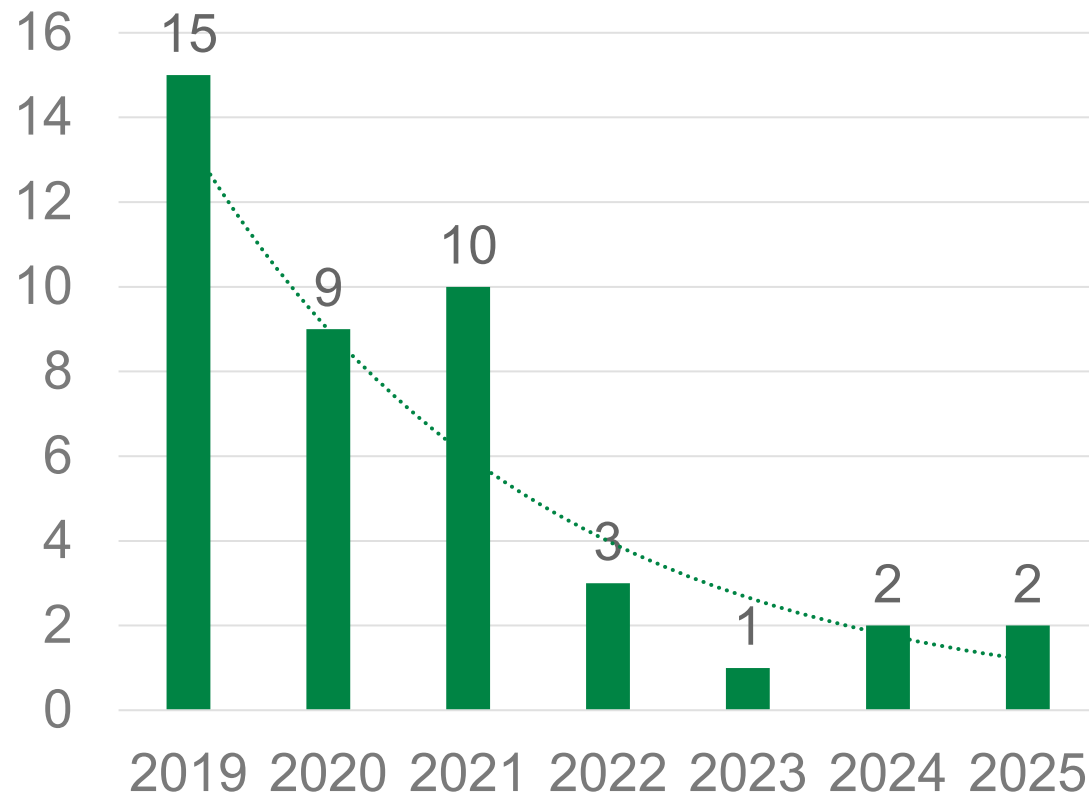
Paenibacillus larvae Positive  
Samples:

2019: n=64

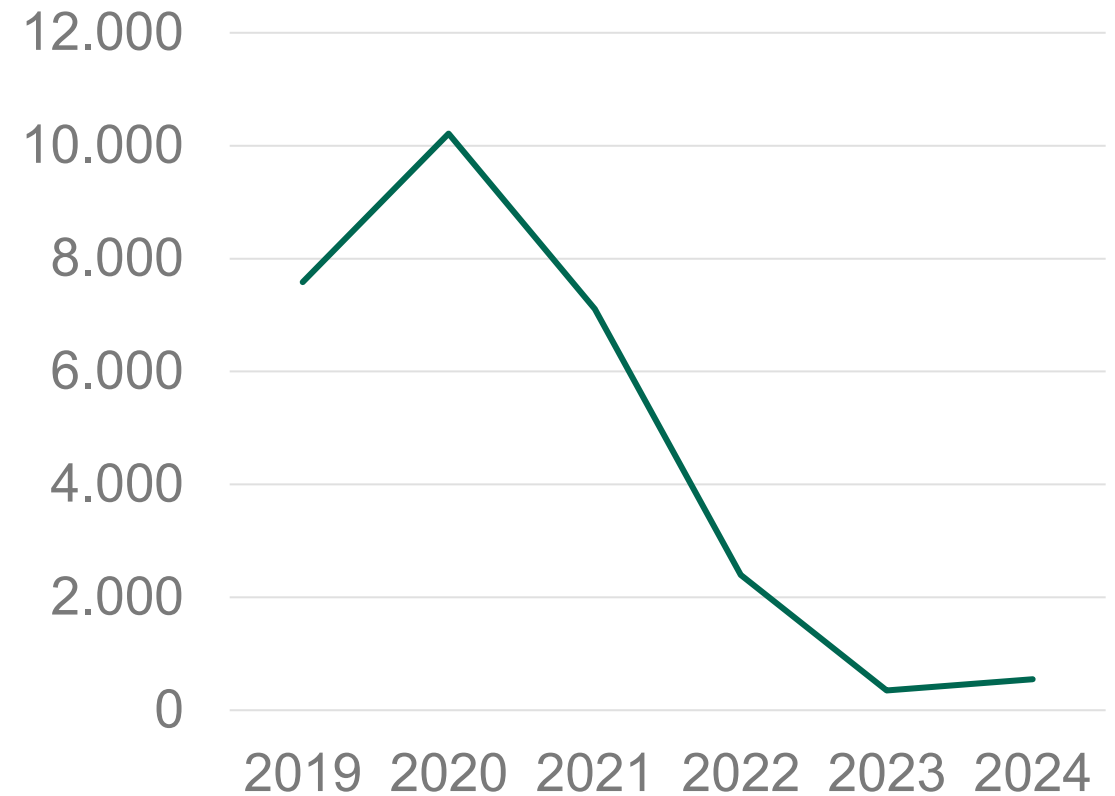
2025-1: n=3

CFU= colony forming units

## Outbreaks of ABF



## Cost for Compensations €



# Success of AFB-Monitoring

- I ☒ Comprehensive testing for AFB in Saxony
  - I ☒ Overview of AFB spread in Saxony
  - I ☒ Identification of unknown outbreaks
  - I ☒ Limiting the spread of pathogens
  - I ☒ Reducing testing/remediation and compensation costs



**Thanks to**

**all participants who contributed to the success of this project.**

(Saxon State Ministry for social affairs, health and social cohesion, Animal disease fund, veterinary authorities, laboratory technicians, beekeepers.)

**you for your interest and attention**