

**WHITE PAPER**

The Cost of Speed in Avian Influenza Surveillance:

How Early Detection Saved a Farm
and Protected a Region

IMPACT SUMMARY

The Challenge:

Highly Pathogenic Avian Influenza (HPAI) outbreak detected on European poultry farm in 2025

The Solution:

Rapid response enabled by Alveo Sense Poultry Avian Influenza Test

The Outcome:

Complete containment in 3 days with zero spread to neighboring farms and zero human infections

BY THE NUMBERS

With Alveo Sense:

45 Minutes	Time to presumptive positive, triggering the enactment of biosecurity measures on-site immediately while waiting for a confirmatory diagnosis
2-3 Days	A PCR result in a laboratory can take 2-3 days from when samples are sent until results are obtained, depending on distance and other parameters.
24 Hours	Time from detection to authorized preventive culling
3 Days	Total time to complete depopulation and burial
0 HPAI	Cases on farms within 10km radius
0 Infections	0 Employees infected
21 Days	Follow-up period with zero secondary outbreaks

Without Early Detection:

+2-3 Days	Time required to wait for traditional PCR lab results
+1-2 Days	Hesitation period analyzing symptoms before sending samples and while waiting for test results
Total Delay	3-5+ days before action could begin
Delay Risk	Continued viral shedding, potential spread to personnel, neighboring farms, and wildlife

IMPACT SUMMARY

The Human Impact of Decision Making in Times of Crisis

"These days are stressful because you're analyzing all aspects, you have your phone glued to your body and you're constantly looking at mortality graphs and analyzing if new symptoms appear."

- Poultry Farm Veterinarian

Without ALVEO Sense On-Site, Vets face a paralyzing dilemma:

- Sending samples too early could create false alarms and strain relationships with authorities
- Waiting for clearer symptoms risks catastrophic spread during 2-3 day observation period

"Before sending the sample, you think twice to avoid creating an alarm. However, the Alveo screening is done without any other consideration and therefore much sooner than when you decide to send samples." - Poultry Farm Veterinarian

Alveo Sense eliminated decision paralysis.

Within 45 minutes, they had intelligence at their fingertips.

BACKGROUND

This case occurred in Europe in 2025, under the supervision of highly trained professionals who, unfortunately, faced the most difficult moment of their lives: responding to an avian influenza outbreak on their farm without any real prior experience. The testing was conducted on-site at a grandparent farm. The presumptive positive test received in under an hour enabled the lead veterinarian present to immediately trigger emergency protocols while waiting for official confirmation.

"Fighting the Avian Influenza virus is everyone's responsibility. If we can contribute by example so that others can be inspired and respond quickly, we all win." - Poultry Farm Veterinarian

TIMELINE OF EVENTS

DAY 0

After detecting the first clinical signs that could indicate a case of HPAI, a **multiplex screening diagnostic test was performed with Alveo Sense**. Samples were collected through cloacal swabbing, and a **positive result was obtained for Type A and H5 in 45 minutes**, which confirmed the veterinarian's suspicions and helped them rule out other diseases.

The speed of the test on-site allowed the lead veterinarians and the rest of the emergency response team to foresee the sequence of decisions they would need to make once they received confirmatory testing and enabled them to enact emergency protocols to:

- Implement all biosecurity measures to protect workers
- Document the case and inform authorities of the suspected outbreak
- Take samples to send to the reference laboratory to confirm the presumptive diagnosis.
- Prohibit the movement of animals and people, and the entry or exit of vehicles except those strictly necessary to minimize spread

Specialized teams in selective culling were contacted to prepare all the necessary equipment to act as soon as they obtain authorization for depopulation.

TIMELINE OF EVENTS



Initial symptoms exhibited suggesting potential AI included reddening of legs, green diarrhea, and nervous symptoms such as turned neck.

DAY 1

Sample collection and shipment to the laboratory was performed according to established EU standards. Authorities and the reference laboratory received all evidence (Alveo Sense results, case description with images, biopsies, and other relevant data such as mortality percentages, etc.)

Authorities, faced with the suspected outbreak **based on clinical history and the Alveo Sense screening test**, authorize preventive culling of the batch **before receiving confirmation from the official laboratory**.

"Depending on the authorities and your relationship with them, and therefore their trust in you, they will either authorize the preventative culling or wait for the confirmatory test. But clearly, the Alveo screening provides a more credible presumption of suspicion."

- Poultry Farm Veterinarian

Once the location was provided and the geographical area was verified, burial of the carcasses and all farm remains, including bedding and feed, was planned on the farm's own land.

TIMELINE OF EVENTS

The urgent deployment of a specialized depopulation team with a tanker truck designed for this task was requested. (Depopulation with CO2 is approved by the EU and is the most animal-friendly method and the least dangerous for the spread of viruses).

They organized into teams and gathered the necessary materials to schedule the culling and facility cleaning days.



Image of the depopulation tanker truck used in many countries.

DAY 2

The official laboratory confirms positive with H5.

Preventive culling and on-farm burial began.

In parallel, work was done to define the legal and necessary dimensions of the trench for the total number of birds. A team was organized to excavate the trench with tractors where the birds were buried after culling.

Each CO2 container that was completed and dumped into the trench was covered with lime and then with plastic before covering it with at least 1.5 meters of soil.



Preventive culling and burial on-site commenced following approved guidelines by local authorities.

TIMELINE OF EVENTS

DAY 3

Culling and burial work continued.

A large team of people worked in shifts during long days, which required all safety measures. One team was responsible for ensuring biosecurity standards were continually met.

Depopulation and bird burial work was completed.

Cleaning tasks had maximum priority.

The official result was published on the Ministry's website.

DAY 4+

The quick action of this successful farm team ensured that, by the time curious visitors began to wander around the farm's surroundings, no animal movement was observed.

Little remained to be done, but cleaning work would continue for a few more days. Although approaching these danger zones is prohibited, there are always curious onlookers who come to the farm motivated by curiosity and the most relevant news.

21 days later, No HPAI cases were recorded on any farm within a 10 km perimeter.

- No employees or workers have been infected with the virus.
- No customers of this farm's products have presented HPAI cases.

Based on the analyzed data and cross-referenced with the farm's available biosecurity metrics, it is suspected that the outbreak originated from wildlife.

"We cannot think or act individually. We, for example, have been in communication with other colleagues with nearby farms to exchange opinions and support each other during this difficult time. We have even offered our Alveo Sense equipment for sampling at another farm and, if the need arises, also for testing dead birds found in the fields around the farms." - Poultry Farm Veterinarian

RESULTS OF RAPID RESPONSE ENABLED BY ALVEO SENSE

Operational Results:

- Complete containment in under 96 hours
- No operational delays due to diagnostic uncertainty
- Maintained customer relationships and contracts

Food Security and Financial Impact:

- Avoided regional quarantine costs for neighboring farms
- Limited loss to single farm vs. potential multi-farm outbreak
- Preserved market access for the region

Safety Results:

- Zero employee infections despite high-risk activities
- Biosecurity protocols activated immediately
- No community spread

Government Partnership Results:

- Authorities trusted rapid screening for preliminary action
- Demonstrated model for future outbreak response
- Official confirmation validated rapid test accuracy

Reputational Results:

- Zero human cases – no virus transmissions to employees or customers
- Transparency with authorities – strong ongoing relationships
- Industry leadership – embracing leading-edge surveillance technology

CONCLUSION

Every day of delay in another outbreak increases risk for:

- That farm's employees and animals
- Neighboring operations
- Regional agriculture
- The food supply chain
- Public health

Avian Influenza can travel up to 5 km in under two days.

Early action can spare 5 farms and save around \$1.1M.¹

If Avian Influenza impacts your operation, will you be ready to respond in 45 minutes or in days?

That delay could mean the difference between a contained incident and a regional catastrophe.

Visit alveotechnologies.com to learn more about Avian Influenza rapid response testing enabled by Alveo Sense and to find distributors in your region.

1. Guinat, Claire. *Poultry farm density and proximity drive highly pathogenic avian influenza spread*. Communications Biology. 2025.



Visit YouTube to view the Alveo Sense Poultry Avian Influenza Testing training video.