

To sustainably manage insect risk, Oxyane implemented a structured strategy built around two complementary levers: **stronger prevention before storage and rigorous grain preservation management with Javelot.**

Historically, Oxyane relied heavily on insecticides to manage infestations that were already established, treating approximately **40,000 metric tons of grain each year.**

These treatments cost around **€2.50 to €3/metric ton**, representing tens of thousands of euros annually, without addressing the root cause and with a direct impact on grain quality and inventory value.

“In 2022–2023, insect-related issues were our leading cause of non-conformity — we were seeing more than 200 cases per year.”



Raphael Comte,
Grain Business Director
at Oxyane

Today, the situation is radically different:

 **Only 6,000 metric tons treated/year**, meaning up to **34,000 metric tons no longer require treatment**, representing approximately **€100K in avoided treatment costs.**

 **A significant decrease in insect-related non-conformities:** from more than 70 cases per year in 2023 to around 10 in 2025, representing up to **~€2,000 in avoided losses per rejected truck** (loss in grain value + round-trip transportation costs).

1. Prevention Upstream: A Multi-Pronged Approach to Prevent Infestations

As part of this upstream prevention strategy, Raphael Comte implemented very concrete measures to prevent insects from spreading as soon as grain enters the facility.

- ✓ **Dedicated cleaning teams between harvests** — grain from the current year must never be stored on top of uncleaned grain from the previous year.
- ✓ **Insect sieves at every site:** sieves that reveal insects through a mirror effect beneath the grain.
- ✓ **Systematic training for operators and seasonal workers on insect detection:** photo reference guides, insect identification resources, and systematic checks upon delivery.
- ✓ **Penalty schedule: a €25/metric ton penalty** displayed in silos whenever insects are detected.

“We communicate the penalty schedule well in advance — starting in June, before harvest intake. And the €25/metric ton penalty is displayed in the silos. It’s a real deterrent.”

Raphael Comte, on its deterrent effect on farmers

- ✓ **Creation of “hospital” sites to isolate contaminated batches**

When an insect is detected despite these controls, an isolation procedure is triggered immediately. The batch is marked INS on the delivery receipt. The affected receiving hopper is isolated, and the batch is transferred to one of two dedicated “hospital” sites equipped with fogging systems.

The priority is no longer to save the batch, but to prevent contamination of the rest of the inventory.

“I’d rather lose €30/metric ton than put an entire industrial site and all the grain stored there at risk.”

As a last resort: PH3 fumigation by a service provider capable of intervening within 24–48 hours to fumigate the storage bin.



Oxyane’s experience shows that **Javelot does not replace essential on-site practices** — cleaning, intake controls, training, and isolation of at-risk batches — but it does help **protect and sustain all the preventive work carried out upstream.** Without this management tool, prevention alone is not enough to prevent grain deterioration or renewed insect activity.

2. Improving Cooling Efficiency with Javelot to Prevent Insect Activity from Resuming

This is where the approach scales up. After all the upstream prevention work has been completed, the challenge is to maintain conditions over time that are unfavorable to insect development through effective grain cooling management.

As Raphael Comte explains:

“Javelot helps protect all the preventive work that has been done upstream.”

And conversely:

“If I don't have a tool to monitor aeration, temperatures, and ensure systems are activated at the right time, it simply doesn't work.”

“Today, without a tool to manage aeration, I don't know how to operate. We'd be going back to a dangerous situation, that's for sure.”

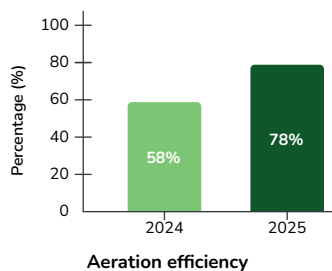


What Javelot Delivers in Practice

1. Automate Aeration

- Automatic activation of aeration during the right weather conditions.
- Result: fewer unnecessary aeration sessions and temperature targets reached faster thanks to improved aeration efficiency.
- More consistent cooling across all sites.

→ Aeration efficiency measures the percentage of sessions that effectively cool the grain. With automation, the goal is to get as close to 100% efficiency as possible.



2. Respond Immediately to Issues

- Hot spot detection.
- Automated alerts.
- Rapid intervention before issues spread.

→ Risk is under control.

3. Drive Long-Term Improvements in On-Site Practices

- Support for teams as they get started with the solution.
- Ongoing training and development of grain preservation expertise.
- Monitoring of adoption and performance.

3. The Impact: A Drastic Reduction in Treatments While Preserving Market Value

Combining **prevention + data-driven management** delivers immediate results while directly protecting the market value of the grain.

Preserving Value

- Up to **€30/metric ton** in **avoided losses** in certain supply chains (e.g., CRC wheat downgrading).
- **~€2,000 in avoided losses per rejected truck** (quality + round-trip transportation costs).

Drastic Reduction in Treatments

- Before: **40K metric tons/year treated**
- Today: **6K metric tons/year**
- Approximately **34K metric tons of treatment avoided**

Smarter, More Efficient Aeration

- Energy savings tracked and demonstrated to management every year.
- Monitoring of aeration costs and efficiency.
- Better control of energy consumption and fewer unnecessary periods of excessive aeration.

Direct Economic Impact

- Cost: **€2.50–€3/metric ton**
- Estimated savings: **up to ~€100K/year**

Next Step: Even Earlier Detection with AI

The cooperative is now focused on continuous improvement. Raphael Comte has identified a key priority for taking the next step with Javelot: identifying potentially infested storage bins before visible symptoms appear by analyzing abnormal temperature curves as an indicator of insect activity.

“There's always the question of detecting issues as early as possible using artificial intelligence.”

Good news: our teams are already working on it. Evolving our solutions based on our customers' real-world needs has always been part of Javelot's DNA.