

Oxi-Tech

Chemical-free, CIP, Pulse Oxidation™ technology.

Validation of the Oxi-Tech Pulse Oxidation™ system
within a dairy farm animal drinking water process at
Agriturismo Camporosso Dairy



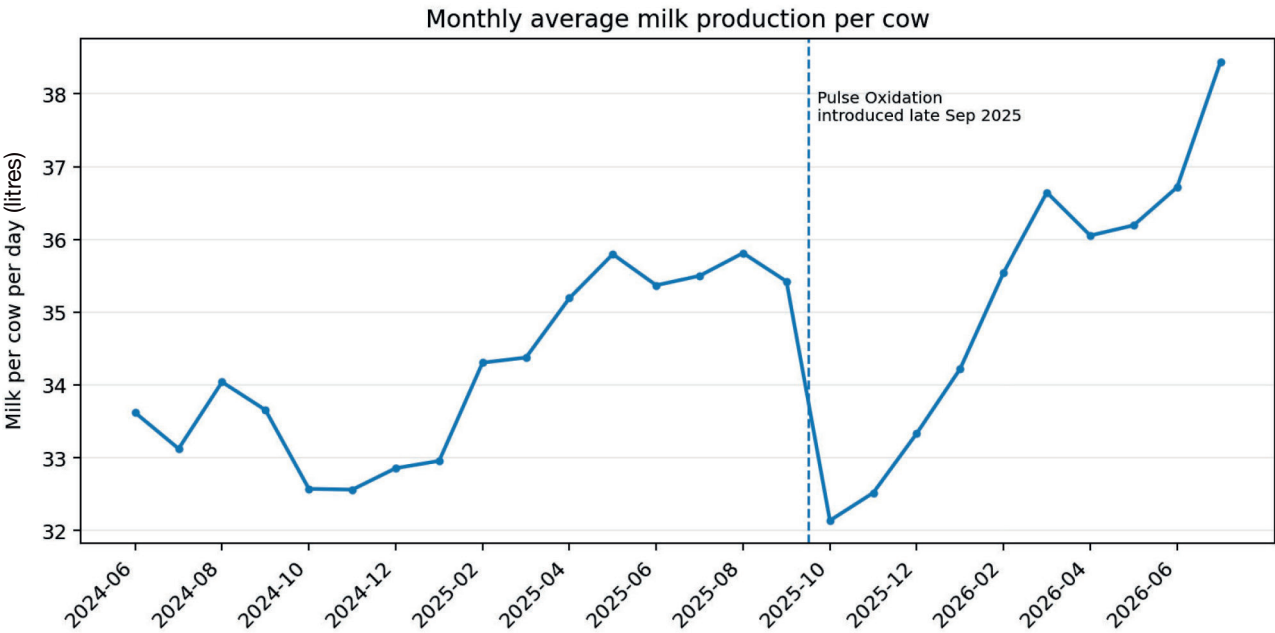
EXECUTIVE SUMMARY

In the Summer of 2025 Oxi-Tech Solutions Ltd. with Italian partners CMC Ventilazione, were called in to conduct a pilot project at the prestigious Azendia Agriturismo Camporosso dairy in the Province of Bergamo, Italy. The business owner Costantino Galli has always adopted a progressive and sustainable approach to his 300 cow herd at his farm and beautiful agri-tourism centre at Camporosso. Signore Galli and CMC identified a common challenge in both keeping the animal drinking water and dairy parlour hygiene to the required standard, whilst trying to reduce their carbon footprint and chemical use. The initial results from the pilot project were significant and encouraging.

In the study, milk production per cow rose materially over the dataset. The earliest pre study baseline full month, June 2024, averaged 33.62 litres per cow/ day. July 2026 averaged 38.44 litres, 14.3% above that baseline, while the latest seven days studied end of July 2026 averaged 39.43 litres, and the latest day reached 39.90 litres. If Pulse Oxidation chemical-free disinfection of the drinking water was introduced in late September 2025, the data is consistent with a later sustained improvement in productivity, but they do not by themselves prove that the water treatment caused the increase.

Table 1: Milk Production Data - Camporosso

Period	Milk/Cow/Day (Litres)	Comparison
Earliest full month - June 2024	33.62	Baseline
Pre-September 2025 Overall	34.12	+1.5% vs June 2024
September 2025	35.42	+5.4%
October 2025	32.14	-4.4%
January-July 2025	34.79	Reference Period
January-July 2026	36.26	+4.2% YoY
July 2026	38.44	+14.3% vs June 2024; +8.3% YoY
Latest 7 days	39.43	+17.3% vs June 2024
30 July 2026	39.90	+18.7% vs June 2024



DATA OVERVIEW

Independent laboratory comparison: Source water before treatment vs Blue Tank after treatment.

Purpose

This summary compares the microbiological results reported for the untreated “Fonte” (Source) water with the water in the “Blue Tank” after treatment by Oxi-Tech Pulse Oxidation. The laboratory reports reference Italian Legislative Decree D.Lgs 18/2023 and subsequent amendments.

Headline Finding

The Oxi-Tech-treated Blue Tank showed all reported microbiological indicators at or below the laboratory reporting/detection limits, whereas the untreated Source water contained measurable faecal coliform contamination.



Table 2: Incoming Animal Drinking Water Laboratory Analysis

Microbiological parameter	Before Treatment Source/Fonte	After Treatment Blue Tank	Observed improvement
Faecal coliforms	12 CFU/100mL	<1 CFU/100mL	Reduced to below reporting limit; >91.7% apparent reduction*
Escherichia coli (E.coli)	<1 CFU/100mL	<1 CFU/100mL	Below reporting limit both before and after treatment
Pseudomonas aeruginosa	<3 CFU/100mL	<1 CFU/100mL	Lower reporting result after treatment; exact reduction cannot be quantified
Viable micro-organisms / bacterial count at 22°C	9 CFU/100mL	<3 CFU/100mL	Reduced to below reporting limit; >66.7% apparent reduction*

Interpretation

- The clearest treatment signal is the faecal coliform result. The untreated Source contained 12 CFU/100 mL, while the Oxi-Tech-treated Blue Tank result was <1 CFU/100 mL — below the laboratory reporting limit.
- The general viable micro-organism count at 22°C also fell from 9 CFU/mL in the Source to <3 CFU/mL in the treated Blue Tank.
- E. coli was already below the reporting limit in the Source sample, so this parameter cannot demonstrate a numerical treatment reduction. Pseudomonas was also not quantified in the Source (<3 CFU/250 mL), although the treated Blue Tank reported the lower value of <1 CFU/250 mL.
- The results therefore support a substantial improvement in microbiological water quality following Oxi-Tech Pulse Oxidation, particularly for the measurable faecal coliform contamination present in the Source sample.

DATA OVERVIEW

What the late-September 2025 intervention implies

1. No obvious immediate milk-yield boost.

Production fell sharply in October 2025, reaching a monthly average of 32.14 litres. That means the raw series does not support a claim that Pulse Oxidation produced an immediate step-change in milk yield within days of installation.

2. The autumn fall appears substantially seasonal.

October 2024 averaged 32.57 litres versus 32.14 litres in October 2025, and November 2024 averaged 32.56 litres versus 32.52 litres in November 2025. The near-identical autumn pattern in the year before treatment is important: it suggests the post-installation October-November trough was not evidence that the treatment harmed production and was likely dominated by normal herd, lactation or seasonal effects.

3. The strongest signal appears from early 2026 onward.

Every month from January through July 2026 was above the same month in 2025. Across Jan-Jul, average production increased from 34.79 litres to 36.26 litres per cow/day, a gain of 1.47 litres per cow/day or about 4.2%. The advantage widened to 8.3% year-on-year in July 2026.

Table 3: Monthly Milk Yield Summary

Month	2025	2026	Change
Jan	32.96 litres	34.22 litres	+3.8%
Feb	34.31 litres	35.54 litres	+3.6%
Mar	34.38 litres	36.65 litres	+6.6%
Apr	35.19 litres	36.05 litres	+2.4%
May	35.80 litres	36.19 litres	+1.1%
Jun	35.37 litres	36.72 litres	+3.8%
Jul	35.50 litres	38.44 litres	+8.3%

4. A biologically plausible route exists, but needs separate evidence.

High-quality, palatable drinking water is important for dairy-cow water intake, health and milk production. If Pulse Oxidation reduced microbial loading, biofilm or undesirable taste/odour without adding residual chemicals, it could plausibly support better water intake and reduce microbial challenge. However, the milk-production file contains no water microbiology, intake, feed, health, mastitis, fertility, weather or lactation-stage data, so that mechanism cannot be demonstrated from this dataset alone.

5. Commercial interpretation.

The most defensible statement is that milk-per-cow performance after the intervention subsequently moved to materially higher levels than both the earliest baseline and the equivalent months of the previous year. This is a strong association worth investigating, but it should be described as an observed post installation improvement rather than a proven treatment effect.



FURTHER DATA

**Independent laboratory comparison:
Bacterial Quality Trends Before and After
Oxi-Tech Installation**
Bulk milk laboratory results from January
2025 to September 2026

Introduction

Having established the improvement in water quality and milk yield over the period, it was deemed appropriate to study the bacterial quality of the milk over the same period, as improvements in milk quality and yield together would have considerable commercial impacts on dairy farm operators and milk buyers. Conversely, an increase in yield at the detriment of milk quality would have the opposite effect.

This summary reviews the bacterial quality results contained in the supplied 2025 and 2026 independent laboratory reports, focusing on TBC (Total Bacterial Count) and the reported Geometric Mean - Total Bacterial Count. Oxi-Tech was installed in late September 2025. Because the two September 2025 samples were taken before, or during, the installation month and the precise commissioning date is not stated in the laboratory reports, they are treated conservatively as pre-installation. The post-installation period therefore begins with the October 2025 results.

Table 4: Bacterial loading in milk (Milk Quality Data)

Measure	Pre-installation Jan-Sep 2025	Post-installation Oct 2025-Sep 2026	Change
Average TBC	15,222	12,458	-18.2%
Median TBC	9,500	6,000	-36.8%
Average geometric-mean TBC	11,125	8,464	-23.9%
Median geometric-mean TBC	9,680	8,550	-11.7%

The arithmetic average TBC was 15,222 before installation and 12,458 after installation, a reduction of 18.2%. The median, which is less affected by occasional high readings, fell from 9,500 to 6,000, a reduction of 36.8%.



Trend after installation

The post-installation results show a generally lower underlying bacterial burden, although the series is not uniform. There were two notable high readings after installation: 33,000 in October 2025 and 106,000 on 25 February 2026. The February result is an exceptional spike relative to the surrounding samples and materially raises the post-installation arithmetic average. Excluding that single February spike as a sensitivity check, the post-installation average TBC is 8,391, compared with 15,222 pre-installation (approximately 44.9% lower). This exclusion is illustrative only and is not a replacement for the full dataset.

From March through June 2026, most individual TBC results were in the 3,000-9,000 range. The final two samples in September 2026 were both 5,000. The geometric-mean TBC also moved downward during 2026, reaching 3,446 in May 2026 and ending at 8,365 in September 2026.

Bulk Milk Bacterial Counts Before and After Oxi-Tech Installation

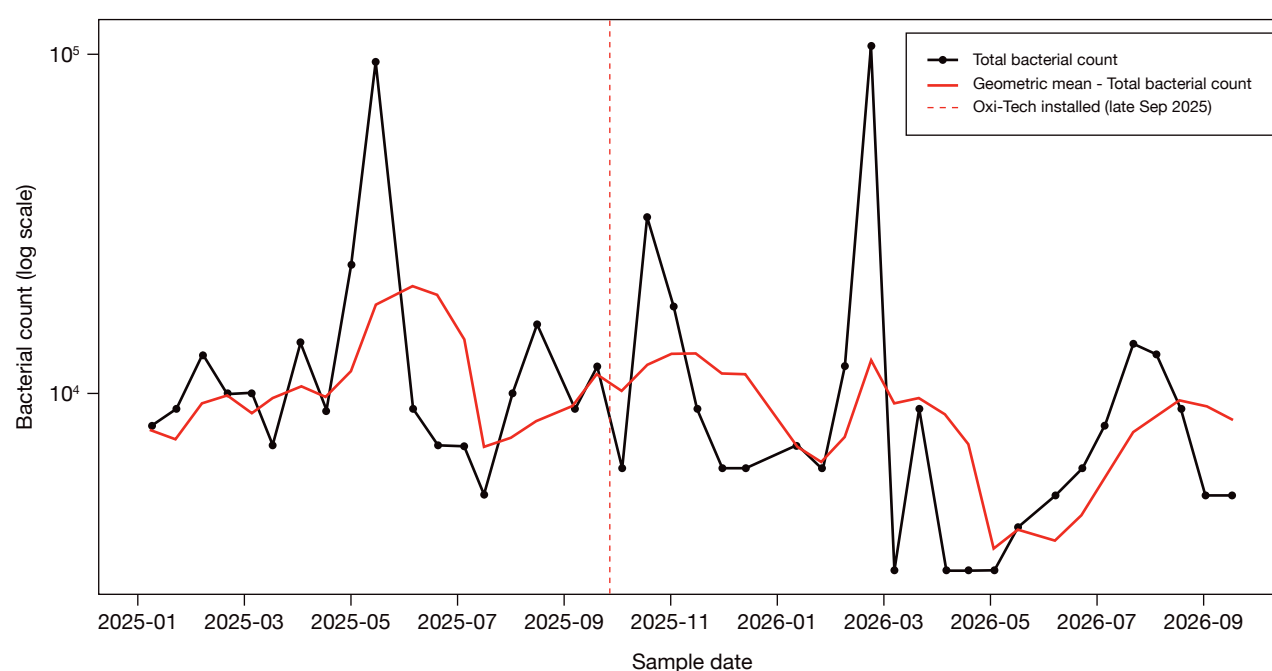


Figure 1. Total bacterial count and geometric-mean total bacterial count across the full reporting period. The dashed line marks the late-September 2025 Oxi-Tech installation.

Conclusion

The laboratory data show an improvement in bacterial quality following the late-September 2025 Oxi-Tech installation. Using the complete pre- and post-installation periods, average TBC decreased by 18.2% and median TBC decreased by 36.8%. The reported geometric-mean TBC also decreased on both an average and median basis. The improvement is especially evident through spring and early summer 2026, when repeated low individual TBC results were recorded.

These results demonstrate an association between installation and lower bacterial counts; however, the laboratory dataset alone cannot establish that Oxi-Tech was the sole cause of any improvement. Other factors such as herd health, seasonality, milking hygiene, cleaning practices and operational

changes are not controlled in this study. The most supportable conclusion is therefore that bacterial performance improved after installation, with lower typical TBC and lower geometric-mean TBC despite occasional spikes.

Basis of analysis

Source: Supplied 2025 and 2026 laboratory reports for bulk milk by the Experimental Zooprophyllactic Institute of Lombardy (public-law health authority). This analysis uses the reported Total Bacterial Count and Geometric Mean - Total Bacterial Count values. Installation timing ('late September 2025') was supplied separately and is not stated in the laboratory reports.

CONCLUSIONS

The data are encouraging for the application of Pulse Oxidation to the treatment of drinking water.

They show a sustained improvement after the late-September 2025 installation, especially during 2026, with Jan-Jul output per cow approximately 4.2% above the same period in 2025 and July 2026 approximately 8.3% above July 2025. The October-November dip is almost identical to the previous year and therefore looks seasonal rather than treatment-related. The dataset supports a credible association, but a causal claim should be backed by water-quality, intake, herd-health and management-control data. It is the intention to widen the scope of such studies in future to include more controls on other parts of the dairy process and to include rigorous data analysis.





Pictured (left to right): Paul Morris, CEO, Oxi-Tech Solutions Ltd; Maria Sagula, CEO, CMC Ventilazione; and Costantino Galli, Owner, Azienda Agricola Camporosso.



We decided to take part in the Oxi-Tech pilot project because we believe in the importance of evaluating new technologies that can bring concrete benefits to livestock farming.

Water is a fundamental element of animal welfare and milk production. For this reason, we chose to test the Pulse Oxidation® system for treating the water intended for the cows' drinking supply, following a gradual and monitored approach.

The first data set we have observed looks brilliant and shows an important improvement in the average milk production per cow. We will continue to monitor the trend over time, with the aim of better understanding the benefits of the technology within our own farming operation.

We are pleased to have joined this pilot project and to contribute to the testing of innovative solutions for the agricultural and livestock sector.

Costantino Galli
Owner, Azienda Agricola Camporosso
(translated from Italian)



We are proud to have launched in Italy, in collaboration with Oxi-Tech UK, a pilot project dedicated to the application of Pulse Oxidation® technology in the livestock sector.

The system has been installed at Azienda Agricola Camporosso in Martinengo, led by Mr. Costantino Galli, whom I would personally like to thank for his availability, trust, and vision in welcoming an innovative technology within his company.

It was not easy to find a farming business ready to test such a new solution, and this is precisely why the Camporosso project represents an important milestone for us.

The objective is to evaluate, through a gradual and monitored approach, the effects of treating the water intended for the cows' drinking supply. The first data collected looks superb and shows an important improvement in the average milk production per cow following the introduction of the system. We will continue to monitor the trend over time, in order to consolidate the evidence and better understand the potential of the technology.

In parallel the study is also planned to assess the application of Oxi-Tech technology in the CIP cycle for cleaning the milking system, with the aim of further exploring the potential of Pulse Oxidation® in sanitation processes as well.

Special thanks go to Paul Morris, CEO of Oxi-Tech UK, and to Luke Bixler, Head of Engineering, for their technical support and collaboration throughout all phases of the pilot project.

Maria Sagula
CEO, CMC Ventilazione



Pictured (left to right):
Paul Morris (CEO, Oxi-Tech Solutions Ltd.); Maria Sagula (CEO, CMC Ventilazione), and Daniel Twitchen (Chief Technologist, Element Six).

Element Six Chief Technologist – Dr. Daniel Twitchen visited the Campo Rosso site recently. Element Six provide vital core technology to the Pulse Oxidation system on the site.



SOURCES

Primary data:

Supplied by the user; daily herd milk production, average production per milked cow and number of milked cows, 1 June 2024 to 30 July 2026.

Important limitation:

Observational before/after data can be affected by seasonality, ration, lactation stage, herd composition, weather and health. The figures above demonstrate association, not proof of causation. More Primary Data in separate paragraphs as follows.

External context:

Penn State Extension, “Interpreting Drinking Water Tests for Dairy Cows” (updated 13 May 2024), which notes that good-quality water is important for maximum milk production and herd health and that water-quality problems can reduce water intake and production. A peer-reviewed study also reports that contamination and palatability can influence dairy-cattle water intake and preference.

Table Data

Table 1:

Milk Production Data: Provided by Azendia Agriturismo Camporosso; Daily herd milk production records, average production per milked cow and number of milked cows : 1 June 2024 to 30 July 2026.

Table 3:

Monthly Milk Yield Summary

Table 2:

Incoming Water Quality Data - provided by Scienze e Tecnologie per L’Ambiente S.r.l. - EST, Bergamo / Environmental Science and Technology Laboratories Ltd. - EST, Bergamo

Table 4:

Bacterial Loading in Milk Data provided by Istituto zooprofilattico sperimentale della lombarda (ente sanitario di diritto pubblico) / The Experimental Zooprophyllactic Institute of Lombardy (public-law health authority)



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