innovating together

Innovating Food Safety Testing: How BAMOS AG and Cyclone™ Lead the Change

Bamos AG

Exterior view of the BAMOS AG laboratory

Patrick Wirth is the **CEO of BAMOS AG**, a leading Swiss laboratory renowned for its expertise in microbiological and chemical analysis. Founded in 2006, BAMOS AG has established itself as a reliable partner in ensuring food safety and regulatory compliance, particularly in the dairy industry and udder health. The company provides advanced analytical services—including antibiotic resistance profiling and hygiene monitoring—all conducted under stringent ISO 17025 accreditation standards.
Under Patrick's leadership, BAMOS AG has expanded its service portfolio, integrated advanced automation technologies such as Cyclone™, and strengthened its reputation for scientific excellence and innovation.
We interviewed Patrick to understand how Cyclone™ streamlined BAMOS AG's analytical workflow and to listen to his insights into the future of laboratory testing and food safety.

Hi Patrick. When did you choose to automate your laboratory?

The decision to implement Cyclone™ was made after our visit to Copan in Brescia in the autumn of 2023.

How well did Cyclone™ integrate into the laboratory workflow?

The setup phase required significant effort to tailor Cyclone™ to our laboratory's specific needs. After the necessary adjustments, integration into daily operations was smooth, and the system quickly became an efficient and reliable part of the workflow.

How many plates has Cyclone™ analyzed so far?

The maximum throughput achieved so far has been about 320 plates per day. In a typical session, 150 to 250 plates are analyzed daily. The device is not yet being used at full capacity, but we look forward to increasing the number of tests.

What types of food matrices have Cyclone™ been used for?

We chose Cyclone™ because it is designed to analyze various food matrices, offering versatility and adaptability across different sample types. Here, we process all kinds of samples, from liquid matrices such as milk and dairy products to more complex matrices like sauces, sandwich fillings, and pastes. After preparation, it remains equally effective with viscous substances like syrups, solid foods such as meat and cheese, and even dry powders. This broad range of capabilities make Cyclone™ a reliable and efficient tool for handling diverse food samples in a single, streamlined workflow.

Cyclone™

Has there been an improvement in analysis quality?

Cyclone™ represents a different way of working that ensures reproducible results, regardless of the experience level of

the laboratory technicians. In the case of BAMOS, the initial conditions were already very satisfactory due to the high skill level of our personnel and the stringent requirements of the Swiss proficiency ring tests that we must fulfill. As an accredited laboratory, we adhere to the high standards demanded by Swiss regulations. With Cyclone™, we have successfully maintained our high testing quality, observing no deviations in the repeatability and consistency of results compared to manual methods.

What impact has Cyclone™ had on variability between operators?

The variability and fluctuations among operators have been reduced, ensuring consistent performance regardless of the operator. By minimizing manual intervention and incorporating reliable systems, the risk of human error is greatly decreased, leading to more uniform outcomes and improved overall reproducibility across operations.

Has there been an improvement in the interpretation of bacterial growth?

No major differences have been found between the results from Cyclone™ and those from manual analysis, even with viscous samples that are more difficult to homogenize with molten agar medium. This is important because the quality of our results was already of a high standard, and it was crucial for us to maintain this level of excellence. Cyclone™ has enabled us to achieve this, ensuring our high standards are upheld throughout the process.

How does Cyclone™ support audits or certifications?

There has not been an external audit that has not yet been conducted; we anticipate that the system's automation of processes will have a significant positive impact. Standardization means minimizing variability, and we believe that the system ensures consistent results and reliable data, which are critical for meeting the requirements we need to comply with. Furthermore, the complete traceability and comprehensive documentation the system provides offers a transparent and well-organized data trail, which will likely facilitate the audit process and demonstrate compliance with regulatory standards.

What effect has Cyclone™ had on operating costs?

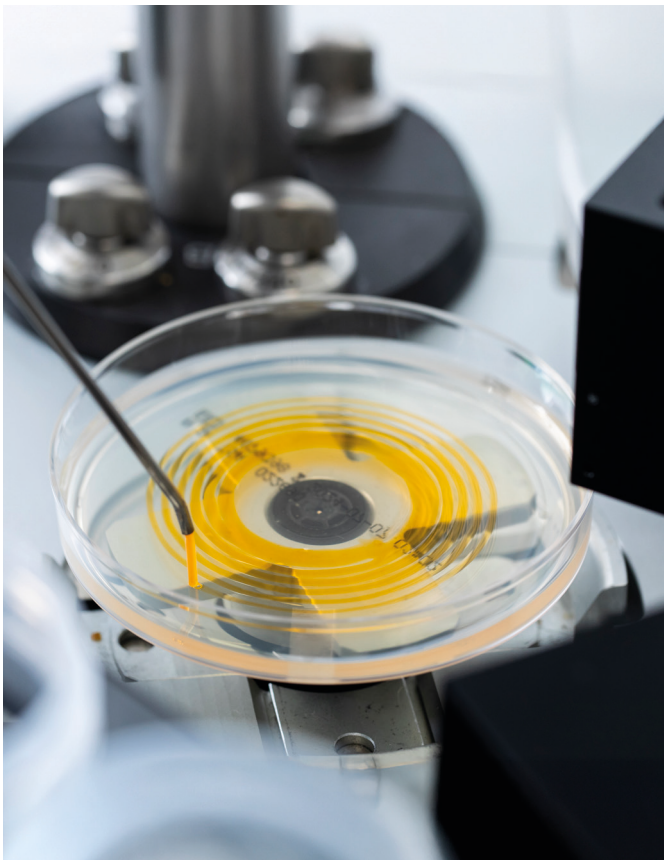
Material and maintenance costs have risen, especially for disposable materials, hoses, and pipette tips. Personnel expenses were initially higher during the transition to automation due to additional training resources. However, after three months, personnel costs stabilized and fell below pre-automation levels after six months. We expect that savings in personnel costs will exceed the rise in material expenses. Preliminary results suggest Cyclone™ will save the equivalent of about 2 to 3 full-time employees (FTE) in the long run, ensuring a more cost-effective operation.

How has workflow management improved?

There has been increased flexibility in personnel resource allocation. Before the introduction of Cyclone™, our laboratory workflow was structured with plate counting in the morning and sampling in the afternoon. Now, with Cyclone™, we can perform both activities throughout the entire day, significantly enhancing our flexibility. Processes in our laboratory have become much more reproducible and consistent thanks to standardized workflows and advanced automation. Traceability is fully guaranteed through LIMS integration. This transformation allows us to support our clients more efficiently and proactively, ensuring we meet their needs with greater responsiveness and adaptability.

Thank you, Patrick. Last question: how do you see the future of quality control laboratories?

I believe that automation will increasingly impact quality control laboratories across various industries. After all, automation is not just about saving time; it's about elevating standards and staying ahead of industry challenges.



Cyclone™ automated spiral plating