

Summary

Unilever was an early adopter of rapid methods, using Celsis® systems worldwide in both company-owned and contract manufacturing facilities for both Hygiene & Personal Care (HPC) products and Unilever Foods brands.



MICROBIAL SOLUTIONS

How Celsis® Rapid Detection Systems Provide Operational Benefits to Unilever

“The Celsis technology is a reliable and efficient method for quickly screening sterilized food products... a state-of-the-art tool.”

— André van Zuijlen, Lead Scientist, Unilever R&D

Overview

Getting products to market faster than the competition can be a significant advantage. Consumers’ fickle and changing tastes, in everything from shampoos to functional beverages, require frequent inventory turns and shorter production cycles to maximize profitability and reduce retail out-of-stocks, a common problem with seasonal or trending items.

Unilever was one of the first companies to recognize the economic value of faster product release, and the company became an early adopter of an enabling technology: rapid microbial product screening. The company now has over 20 years of experience using Celsis rapid detection systems at more than 40 locations around the world.

Unilever uses Celsis® reagent kits to screen its food and beverage products and a wide range of HPC products including toothpastes and dental rinses; face, hand, and hair washes; skin creams and lotions; household cleaners; and laundry detergents and fabric conditioners. The clear, pass-fail test results of a Celsis screening make it easy to work within the manufacturing environment.

Setting Company Standards

With more than 400 brands focusing on health and wellbeing, and two billion people using Unilever products every day, the company understands how important quality assurance is to its ongoing reputation.

“We were the first company to introduce the use of rapid ATP [bioluminescence testing] into this market,” according to UK-based Peter Jay, Manager of HPC Products at Unilever. The original drivers for rapid methods in the mid-1980s were, “for reducing warehouse, to reduce stock holdings, and to get microbiological results early, to pick up problems early.

“We screened a lot of rapid methods and found ATP meets all the required goals and was commercially viable. It was the one we took forward,” Jay adds. “Progressively, over the years, it’s gone to many factories across the world. It was used in Europe first, then Asia, and then in the US around the mid-90s.”

EVERY STEP OF THE WAY



Unilever & Celsis Partnership

Benefits of Adopting Celsis Rapid Method

- Reduced warehousing costs
- Cost justification/financial return on investment
- Faster product release
- Clear, easy-to-understand results for manufacturing
- Technical and scientific support

Before adopting the Celsis system, various locations used “a combination of a standard total viable count plus an enrichment step,” said US-based Deidre Mitchell, Microbiology Development Manager for HPC Products. Today, “any water-based product that can be released with [Celsis] technology, we’ll just do it. ATP is our preferred release method,” she added.

Operational Benefits

For Unilever, clarity of results is a clear benefit, especially when a positive contamination would be near a cutoff value.

Peter Jay agrees: “A lot of factories have other people trained to do microbiology jobs. If you get a very clear end point, a black and white answer, rather than a gray answer that someone has to interpret, it really helps. The value of that shouldn’t be underestimated.”

Financial Considerations

Although Unilever initially recognized the economic value of faster product release decades ago, they recommend that the implementation of RMMs should be carefully evaluated. Global manufacturers have different approaches and various ways to measure which projects will provide an acceptable return on investment. Unilever knows that without a positive financial return, any project, including rapid methods, is difficult to justify. Jay suggests one works closely with the finance department from the outset.

A proven financial assessment tool, such as one for a global personal care product company developed by Arthur D. Little management consultants with Celsis, is a good starting point for companies to estimate their potential savings. Company-specific information can be used to customize the Celsis Financial and Environmental Impact Report to quantify the financial value of implementation, as well as the benefit to the company’s sustainability efforts at one or multiple facilities.

Unilever expanded its rapid testing in 2013 to include raw materials. “It’s a benefit we recognize, but not something we’ve fully implemented at this moment,” Jay explains. When integrated into a lean manufacturing process, testing

raw materials or formulations before blending enables companies to detect contamination earlier and to reduce the amount of product waste.

Achieving Results

To be able to get micro results even faster, Unilever HPC recently upgraded to the Celsis AMPIScreen® assay, an exclusive method of amplifying ATP. This global rollout required more than a year of pre-work planning, validation of 500 products, and hands-on operator training at Unilever facilities worldwide. Most companies, regardless of size, would find such a project daunting.

“We didn’t have the internal resources and ability to send microbiologists from the central laboratories around the world,” Jay states. “To take on all the validation, all the training; I personally think that would be a major barrier of implementing any rapid method or a change program like this without having a partnership. To do it on a global level with lots of factories would be extremely difficult.”

Unilever made good use of the fact that Celsis has the infrastructure and expertise to include installation, training, and support with its instruments. The company has application labs in the US and Europe dedicated to providing expert validation services for new and existing customers.

For Unilever, the validation services, method transfer, and on-site training provided by Celsis’ Technical Accounts Managers ensured a smooth handoff to the Unilever lab staff at each location. The staff continues the testing protocol in accordance with Unilever’s now-harmonized standard operating procedures.

“From my perspective,” Jay says, “I don’t think we would have attempted to do this without our partnership with Celsis. Without that level of support, it would have been extremely difficult.”