QUALITRU SAMPLING SYSTEMS

PROBLEM SOLVERS

# COMBAT BIOFILMS WITH PRECISION MONITORING

## Biofilm control starts with precise monitoring — stop contamination before it starts.

Biofilms in food and dairy processing present a serious contamination risk and can develop on a variety of surfaces, including stainless steel, plastic and rubber. These biofilms, consisting of communities of bacteria embedded within a protective matrix, are difficult to eradicate and serve as reservoirs for pathogenic and product spoilage organisms, impacting the safety and quality of your products.

The most dangerous and complex aspect of biofilms is their ability to resist traditional cleaning methods, often leading to costly contamination that affects your bottom line. This is especially critical in cheese production, where biofilms can cause spoilage, reduced shelf life and even full-scale product recalls.

### Understanding Biofilm Control

Biofilms are difficult to eliminate because they create a barrier around bacterial communities, known as the extracellular polymeric substance (EPS) matrix. This matrix protects bacteria from sanitizers and other environmental stresses, such as temperature changes. The EPS matrix helps biofilms adhere tightly to surfaces, making them even more resistant to cleaning.

One of the most concerning challenges in biofilm control is their ability to persist even under the toughest cleaning conditions. Food and dairy processors must implement robust monitoring systems to detect biofilms before they become a significant problem.

### The Hidden Threat of Quorum Sensing

Biofilm resilience is driven by quorum sensing, a bacterial communication system that coordinates biofilm formation and drives biofilm resilience. As bacteria grow in number, they release signaling molecules that allow them to communicate and strengthen their defenses. This synchronized behavior makes biofilms particularly difficult to remove and gives bacteria the ability to resist sanitization efforts.

In cheese production, this poses a unique threat, as biofilms can spoil products and introduce contamination risks if not properly detected and controlled.

### Proactive Monitoring for Early Detection

For over 40 years, QualiTru Sampling Systems has offered precision aseptic sampling solutions designed to detect microbial risks early. By using real-time monitoring technology, our systems help you detect biofilm formation before it becomes a costly issue. Early detection allows you to take targeted actions to prevent contamination and maintain product integrity.

### Advanced Biofilm Control Strategies

While quorum sensing inhibitors (QSIs) offer a promising future, vigilant process monitoring remains the most effective biofilm control strategy today. QualiTru's TruStream™ technology provides continuous insights into microbial activity at critical control points throughout your processing line. This level of precision helps ensure early detection, allowing you to mitigate risks and ensure product safety.

3-D rendering of sanitation-resistant bacteria in a biofilm.

### Learn More!

Don't leave biofilm detection to chance. Scan the QR code to download our comprehensive white paper on controlling biofilms, including the emergent technologies of QSIs, while exploring effective strategies to improve your process hygiene today.