Dairy Dilemmas.

How a Simple Tool Could Save Dairy Processors from Contamination Disasters

Dairy Contamination

Milk and dairy products from Australia are considered to be amongst the safest and most thoroughly regulated in the world. However, between 2013 and 2014, the Australian Competition and Consumer Commission (ACCC) reported 16 separate dairy product recalls, 14 of which were the result of microbial contamination (including *L. monocytogenes and E.coli*). A spate of well-publicised contamination incidents has rattled the local dairy industry, revealing the inherent commercial risks assumed in procuring, processing and producing milk products. For a risk-averse Australasian market, even any potential of a contamination threat presents a serious commercial liability.[1]

As the world's third largest dairy exporter (accounting for 10% of the global export market) and the country's third largest rural industry, the local dairy industry forms an integral part of Australia's primary export economy.

The financial fallout from a single recall can also prove crippling for affected businesses. A 2011 Ernst and Young study revealed that 52% of businesses experienced a minimum of $US10 million in losses as a direct result of a single product recall event – including downtime, stock losses and subsequent legal action.[2]

Indeed, beyond the obvious public health risks, a suspected contaminant – whether real or perceived – could jeopardise millions of dollars of inventory and cause severe reputational damage to the business and industry as a whole.

It is imperative therefore that dairy processors establish robust cleanliness assurance and hazard management programs on-site to detect and eliminate potential biological contaminants. Food Standards Australia New Zealand (FSANZ) requires all dairy manufacturers to maintain a documented on-site food quality assurance program based upon HACCP to ensure compliance with mandated local and international food safety codes.[3]

Recent advances in cleanliness detection technologies have greatly simplified this once onerous quality assurance process. Handheld technologies have empowered the food industry and regulatory bodies with the knowhow and ease to accurately identify and root out biological contaminants throughout the production process – from farm to fork.[4]

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1 http://www.pwc.com.au/industry/agribusiness/assets/australian-dairy-industry-nov11.pdf

2 http://www.gmaonline.org/file-manager/images/gmapublications/Capturing_Recall_Costs_GMA_Whitepaper_FINAL.pdf

3 http://www.dairyaustralia.com.au/Industry-information/Food-safety-and-regulation/Dairy-food-safety.aspx

4 http://www.gmaonline.org/file-manager/images/gmapublications/Capturing_Recall_Costs_GMA_Whitepaper_FINAL.pdf

Why Cleanliness is a Commercial Imperative?

Few industries are as hygiene-sensitive as the dairy industry. Milk – owing to its protein and fat-rich properties – provides an excellent medium for microbial growth.[5]

Unchecked milk residues offer a fertile incubation point for microbes and potential pathogens, without rigorous cleaning of equipment and working surfaces, microbe harbouring residues can pose a serious contamination risk for future batches, leading to costly stock losses, increased productivity imposts (involved in re-cleaning), and significant inventory costs (with the product held until culture agar results are received – often 1-3 days – risking stock spoilage).

As former World Health Organisation scientist E.B Rice affirms: "[bacteriological] standards of dairy products can be maintained only if the raw product is of good bacteriological quality and is protected against contamination from equipment with which it comes in contact during all stages of processing."[6]

Hygiene assurance is a commercial imperative for the modern dairy producer. After all, an empirically backed cleaning process will not only help ensure consistent daily production of safe, high-quality dairy products but will enhance consumer confidence in your product.[7]

A systematised approach to hygiene and sanitisation remains the only truly effective means to prevent contamination. Yet, with growing global demand for dairy, meeting today's rigorous food standards presents an immense challenge for local manufacturers, particularly when confronted with increasingly onerous throughput volumes.

The Essential Tool for Cleanliness Assurance

Adenosine Triphosphate (ATP) is an essential energy molecule utilised by all living cells. Because ATP cannot be stored or produced by anything other than a living organism, its detection provides a reliable indicator to the presence and concentration of microbial activity (both benign and pathogenic) and other organic matter.

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5 http://www.academia.edu/4344567/Microbial_analysis_and_quality_control_of_milk_collected_from_various_districts_of_Khyber_Pakhtunkhwa

6 http://whqlibdoc.who.int/monograph/WHO_MONO_48_(p457).pdf

7 http://whqlibdoc.who.int/monograph/WHO_MONO_48_(p457).pdf

ATP testing provides a real-time, reliable and cost-effective means to detect the presence of microorganisms or biological residue on preparation and equipment surfaces post-cleaning.

Via a simple swab sample, the handheld ATP test device instantly measures the presence of biological matter on working surfaces, offering a complete and accurate picture of cleaning efficacy.

Measured in relative light units (RLUs), ATP tests can be utilised at critical points throughout the production line, giving a precise and quantifiable indicator of a surface's hygiene status.[8]

A quality ATP hygiene monitoring system can dramatically reduce the incidence of batch rejects, thereby protecting consumers, your brand and crucial retail relationships from a potentially ruinous product recall.

ATP testing forms a key component of today's best-in-class HACCP programs. The internationally recognised British Retail Council's (BRC) 7 Food Safety Standard backs ATP testing for cleanliness assurance in all food processing facilities. Furthermore, the Global Food Safety Initiative (GFSI) supports mandatory hygiene validation throughout the production process.[9]

Expert ATP Detection Technologies from 3M

An industry leader in hygiene monitoring and detection technologies, 3M is the gold standard in cleanliness assurance solutions for today's food and healthcare industries.

8 Do all ATP systems rise to the challenge? 3M Article

9 http://www.foodquality.com/details/article/4546961/Hygiene_Monitoring_Strategies_that_Hit_the_Mark.

The 3M™ Clean-Trace™ ATP system provides an objective and highly reliable indication of cleanliness on work surfaces (and thus microbial risk) within seconds of sample collection.

The 3M Clean-Trace system integrates seamlessly into any HACCP programs for on-the-go, real-time testing, even in the most challenging work environments. The 3M Clean-Trace swab can be applied across any surface or liquid sample, offering superior repeatability over similar non-specific swab-based testing systems. The flexible swab shaft offers effortless access to hard-to-reach places, accommodating today's Clean-in-Place maintenance processes.

With unrivalled accuracy and proven high-level repeatability, 3M's ATP detection technologies will dramatically reduce the incidence of false readings. A reduction in false-positives will not only slash unnecessary cleaning time (a major productivity burden) but will reduce incidence of costly equipment downtime. Most importantly, assured accuracy also decreases the likelihood of out-of-specification food products being released with a false low result, ensuring only the highest quality products reach consumers.

Unique among ATP detection systems, all 3M Clean-Trace devices are paired with intuitive data analysis software (both PC and Cloud-based platforms) for rapid test analysis, automated reporting and long-term tracking of results.

With a dedicated local presence in Asia-Pacific region, 3M is on-hand to assist Clean-Trace device users with specialist advice and knowhow from real-world industry experts. 3M provides in-house training, local instrument service, and access to unrivalled expertise in hygiene assurance technologies from around the globe.

To find out more, contact your local 3M Food Safety Representative using the below details.

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