



A case study: Rapid tests improve efficiency saving time and money

Environmental testing plays an important role in monitoring preventative measures to ensure quality and safety in manufacturing because finished product testing is of limited value.

For manufacturing efficiency, production stoppages have to be kept to a minimum, and high standards of hygiene of manufacturing equipment need to be maintained. The production environment, including surfaces in and on mixing and filling machinery, undergoes regular cleaning and efficiency monitoring by microbiological testing.

Company X routinely send samples to an external contract testing laboratory to measure the hygienic status of the production equipment using the traditional culture method for bacteria. The turnaround time for results is four days and generates significant on-cost. The company required an alternative test system that could be used on-site to provide a rapid result facilitating timely response in support of the manufacturing requirements and to reduce costs.

An on-site trial was conducted to monitor cleanliness using the Hygiena EnSURE system for both the direct measurement of product residues (ATP using UltraSnap) and the measurement of bacteria using MicroSnap Total (AOAC certified). Surface swab samples were collected and tested using UltraSnap after cleaning from nine different sample locations of manufacturing equipment taken over several days when >10 different product types were being manufactured.

The range of contamination levels detected were 0-974 RLU but most samples were low (average 18 RLU; median: 11 RLU) showing a high standard of cleaning. One high result (974 RLU) was detected at the L1 nozzle that required further investigation.

A similar number of samples were tested with MicroSnap Total. The range of contamination levels detected were 0-46 CFU but most samples were low (average of 4 CFU;

median: 3 CFU). One high result (46) was detected at the L1 nozzle that required further investigation.

The UltraSnap ATP test results show a strong similarity to the bacterial results from MicroSnap (58% agreements) however this is not the intention and the two methods measure different things and provide valuable complementary information.

Inadequate cleaning occurs when significant amounts of organic material are still present even though bacteria may not be detected. The residue still represents a potential hazard for recolonisation and the formation of biofilm which can be very hard to remove. The results give definitive indicators for the hygiene team to take action and improve cleaning practices in those locations.

UltraSnap provides an instant objective measurement of product residue to verify the efficacy of cleaning processes and identified potential areas of improvement that were not identified by a microbiology test alone. If the ATP test is negative, it is more than likely that no bacteria are present.

MicroSnap gave more meaningful results than the traditional microbiology test results because it measured lower levels of contamination in the range 1-10 CFU/swab and the time to result was much shorter. The contract testing laboratory reported all results as <10 CFU/ml from part of the swab extract and could not detect any difference between samples.

MicroSnap measures 100% sample collected on the swab and could detect and differentiate between samples. Using both UltraSnap and MicroSnap measures two key components of hygiene to give greater assurance, understanding, control and improvement.

The implementation of MicroSnap streamlined the process and made microbial testing easier, more flexible and more efficient by reducing the time to result by >80 hours, while cost per test has been reduced by around 40%.