



How a U.S. Food Processing Plant Reduced Pathogen Positives by 99%

Learn how the plant manager of a major U.S. food processing plant can “sleep better at night” now that they have significantly reduced pathogen positives in the environment using a sensitive ATP test.

Executive Summary:

A major U.S. food processing plant (XYZ Food Co) was experiencing sizable operational disruptions and increasingly high pathogen testing costs associated with higher-than-desired positive pathogen results. To address this quickly and in compliance with Food Safety Modernization Act (FSMA), XYZ Food Co focused on using adenosine triphosphate (ATP) sanitation verification in Zone 3 areas.

XYZ Food Co created a Pilot Program for 23 test sites that included an immediate reclean of detected ATP positives using a sensitive ATP test. Combined with a triggered vector search, XYZ Food Co’s Zone 3 plant pathogen positives dropped 99% and they are on track to achieve \$72,720 annually in projected savings.

The Challenge:

XYZ Food Co had difficulty drawing a correlation between their internally performed microbial indicator test, aerobic bacteria CFU/mL, and to their externally performed pathogen sampling results.

The Problem:

Pathogen samples were collected and sent out for analysis with at least a 48-hour delay in results. When positive results were reported, the failing location needed to be cleaned and retested along with 5 additional vector sites in close proximity, across 3 consecutive days of cleaning.

Reduced Waiting From
**48 Hours to
5 Seconds**

ZERO
Positive Pathogen Hits

\$72,720
Saved Per Year

This calculated to 15 pathogen retests for each positive pathogen detected at \$20/test plus shipping was costing more than \$300 for every positive result incident. Multiplied by an average of 23 positives per month, it was costing \$6,900 monthly and over \$82,800 annually. Waiting 48 hours or more for retest results was disrupting operations and elevating contamination risk in Zones 2 and 1. Something needed to be done—and quickly—to give the plant control over their sanitation results.

The Solution:

Part of developing a long-term solution for XYZ Food Co was understanding the underlying cause of their positive pathogens and sanitation concerns. XYZ Food Co implemented Charm's novaLUM® II-X ATP Detection System and sensitive PocketSwab® Plus ATP test to detect organic food soils/residues/microbes at the lowest possible level in Zone 3.

Using the novaLUM II-X system and PocketSwab Plus ATP test, Charm was able to demonstrate to XYZ Food Co's cleaning crew how high levels of ATP in Zone 3 traffic areas quickly transfer throughout the other zones. An initial check of a clean plastic shoe cover gave a Relative Light Unit (RLU) <1500 RLU. After walking 40 feet through "cleaned" Zone 3 area, the recheck on the shoe cover was 959,464 RLU indicating a large amount of ATP remaining in the processing area although it had been "cleaned".

Additionally, the XYZ Food Co cleaning crew was overusing cleaning chemicals to address pathogens, which was ineffective and costly. This also caused floor conditions to degrade that lead to more harborage points for pathogens. Charm helped focus XYZ Food Co's sanitation practices by using detergent to clean instead of sanitizer.

The sanitation crew was surprised at "how easily and quickly" (when proper sanitation protocol was followed) they were able to achieve passing results on the PocketSwab Plus ATP test.

Everyone was "high-fiving".

Sanitation was able to understand the benefit of quickly removing the trail of ATP in Zone 3. XYZ Food Co's sanitation team was then able to incorporate this new approach of recleaning any ATP failures immediately on detection and vectoring out to other close proximity ATP positive sites.

The Results: In one month, XYZ Food Co had no positive pathogens in Zone 3 environmental swabs

Using a simple to achieve pass/fail threshold of <5000 RLU in Zone 3, the factory tracking data indicated that XYZ Food Co workers had lowered the average PocketSwab ATP RLU counts by 4-logs to less than 1500 RLU.

XYZ Food Co's new Charm PocketSwab Plus ATP swabbing/vector program in Zone 3 allowed the sanitation team to:

- Identify sanitation issues
- Reduce microbial spend due to less positive pathogens
- Empower the team to take corrective action/reclean when ATP failing results are detected
- Reduce production downtime by proactively preventing pathogen failures with effective sanitation control
- Reduce improper use of chemicals
- Decrease wastewater

Since implementation, XYZ Food Co adopted the first month average of 1500 RLU as the new passing control level.

Finally, while ATP swab use has increased ~400/month, the number of pathogen retests done at the plant has decreased to zero. This reduction translates into more than \$6,060/month of direct savings in pathogen tests/retests.

Utilizing Charm as proactive test in Zone 3 reduces pathogen hits in real time. Reduce hits = Reduce risk = Win for quality. Win for plant manager's profit and peace of mind.

Disclaimer: Non-material details in this case study were adjusted and or changed to protect the identity and confidentiality of our client.