FROM INSIGHT TO ACTION

Pathogen Mapping Effectively Addresses *Cronobacter sakazakii* Contamination in Infant Formula Manufacturing Facility

BACKGROUND

An infant formula manufacturer needed to understand and mitigate *Cronobacter* contamination.

An infant formula manufacturer recently confirmed *C. sakazakii* was present in the environment, raw materials, and in-process and finished product — but they had several unanswered questions:

- **Is the same strain of *C. sakazakii* detected every time, or are new strains being introduced?**
- **Where are the strains coming from and how are they migrating through the factory?**
- **What do we know about the strains and how can we mitigate future issues?**

Each time *C. sakazakii* was found, it cost the manufacturer almost a full week of halted production and over $2 million in lost sales, variable and fixed operational expenses, and root cause analysis cost. When standard mitigation practices did not resolve the issues, they turned to bioMérieux for help.

METHOD

bioMérieux utilized their tools and specialists to gain new insights into the contamination.

The manufacturer shared 144 *C. sakazakii* isolates collected over a 12-month span that were found in the factory environment. bioMérieux implemented pathogen mapping—a combination of sequencing, bioinformatics, data science, and process expertise—to analyze and provide insights to the manufacturer.

RESULTS

Analysis confirmed the mitigations employed by the factory were not resolving the contamination issue.

The project answered the following questions about the *C. sakazakii* isolates:

Is the same strain of *C. sakazakii* detected every time, or are new strains being introduced? bioMérieux found three different recurring strains of *C. sakazakii*, one of which was found across all 12 months of the sampling period.

Where are the strains coming from and how are they migrating through the factory? This *C. sakazakii* was not located in one single area of the factory — it originated in a medium hygiene zone and ultimately spread and reached a high hygiene zone.

What do we know about the strains and how can we mitigate future issues? It was discovered that the particular *C. sakazakii* group developed a resistance to silver, copper, and nickel. The manufacturing facility relied on silver anti-microbial coatings in several areas of the different hygiene zones.

CONCLUSION

bioMérieux's utilization of pathogen mapping enabled the company to save $2 million and eradicate the contamination.

By partnering with bioMérieux, the manufacturer was able to quickly understand their persistent *C. sakazakii* issues and make data-driven decisions to address the problem. These interventions not only saved the company millions of dollars of lost production time, but also ensured they were delivering a safe product.

Visit **biomerieux.com/us/low-moisture** to access the full case study.

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