DuPont Qualicon RiboPrinter® System

APPLICATION PROFILE

Protecting Your Company By Monitoring Microbial Content of Products From Suppliers

The popularity of ready-to-eat foods that command high prices encourages their producers to be innovative. At the same time, they must always keep customer safety in mind when making and handling such sensitive products, which are especially sensitive to contamination from microbial growth.

One such producer began using the genetics-based RiboPrinter® Microbial Characteriztion System to establish a database that could be used as a due-diligence defense for these high-risk products. The original surveillance monitoring included characterizations of organisms of concern: *Listeria, Escherichia coli, Salmonella* and *Staphylococcus aureus.*

Listeria found in cakes

The project took a new and disturbing turn, however, when several trends began to emerge. One of the products the company sold was a complex, fancy, ready-to-eat cream cake. Ribotyping indicated that a number of the company's cakes contained cream that was contaminated with the non-pathogenic organism, *Listeria welshimeri.*

Although the company bought these cakes from a number of suppliers, the RiboPrint® patterns of this particular strain of *Listeria* were generated only by isolates from the samples from a single supplier. Confronted with this evidence, the supplier was stunned. They knew *Listeria* was frequently found in water and they feared that this environmental contaminant could be accompanied by other, more dangerous organisms such as the pathogen *L. monocytogenes.*

Using the RiboPrinter® system, the supplier's staff quickly began an audit of the cake-making process to determine the source. They determined that the production line was contaminated.

Cleaning up by tracking down

Further examination led the supplier to a vat of cream that was suspended above the production line. This vat was kept very cold and the surrounding warm, humid air was causing condensation to form on the pipe leading from it.

This condensation was dripping on the cakes below. Environmental swabbing of the pipe condensate produced microbial colonies and RiboPrint® patterns confirmed that this was the source of the contamination.

In the past, the supplier had been disinfecting the spigot on this cream vat because it came into direct contact with the cream. However, they ignored the pipe on which the condensation formed. When the company added regular disinfection of the pipe to their cleaning regimen, the contamination problem was solved.

Conclusion

The new cleaning procedure restored confidence in this supplier. The RiboPrinter® system had proved to be a valuable tool for the manufacturer in the surveillance of suppliers.

With the source of the contamination identified and targeted cleaning accomplished, the company that sold the cakes was assured that its supplier's problem had been resolved. The supplier's reputation with its customer was restored by using this definitive, fast information.

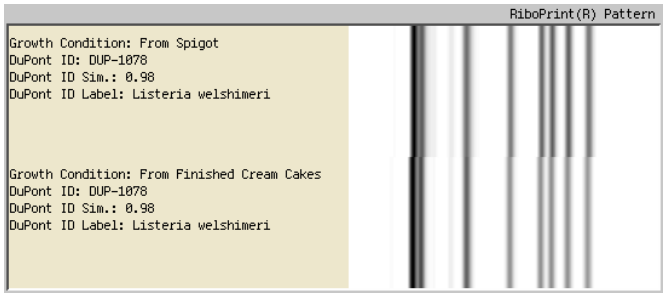

Figure 1. By matching patterns of *Listeria welshimeri* from finished product samples to those from isolates from a pipe that was dripping condensate, investigators were able to track the source of contamination and target cleanup effectively.

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