DuPont Qualicon RiboPrinter® System

APPLICATION PROFILE

The Bad News: Your pizza topping has *L. mono* The Good News: We can help you get rid of it—for good

The success or failure of a food producer rests heavily with its reputation. Nothing hits a company harder than the discovery of a pathogen like *Listeria monocytogenes* in finished product. Finding the source of the offending organism and knowing the microbial profile of the processing area for future reference are all part of smart management in production.

New business, old problem

A start-up company bought fermented and cooked meat products in bulk, then prepared pizza toppings and sauces for supply to the food service and retail sector. They had astonishing success in their first year of business, but suddenly everything seemed to go wrong when health inspectors reported that they had isolated *Listeria monocytogenes* from the pizza toppings.

The company's laboratory was not able to detect the organism immediately after production, but did concede that growth could occur during the extended chilled distribution and storage of the product. A detailed microbiological analysis of the factory showed that raw meats contained the organism of concern.

Before removing some valued suppliers from their list, the company decided to further analyze their findings using the RiboPrinter® Microbial Characterization System.

Searching for the source

Over a period of three days, the RiboPrinter® system processed the isolates and determined that although some raw materials were indeed contaminated with *Listeria monocytogenes*, the RiboPrint® patterns were different from those found by the Health Department.

When the investigators shifted emphasis to analysis of larger samples of finished product, they found very low numbers of *Listeria monocytogenes*, but this time the RiboPrint® patterns matched those found by the Health Department inspectors.

Further investigation showed that the only area of the factory contaminated with this matching type of *Listeria monocytogenes* was the cleaning/hygiene room, where all the chemicals and detergents were stored. Cleaning was contracted out to a separate company whose staff worked at night, so the team decided to monitor the cleaning practices during the following week. Incredibly, they found that the poorly trained hygiene crew cleaned and sanitized the raw meat storage area, then moved to the pizza

preparation area without implementing any decontamination steps. This lack of hygiene precautions resulted in their carrying the *Listeria monocytogenes* contamination into the sensitive area of the factory.

Conclusion

The food company hired a new hygiene service and the problem was solved. The company has continued to produce superb financial results and will relocate to new, larger premises next year.

They have requested that a full ecological mapping of the factory be done using the RiboPrinter® system during installation of the production equipment. In this way, they plan to efficiently manage and resolve any microbiological problems before full-scale production begins.

Listeria monocytogenes (from raw material isolate)

Listeria monocytogenes (from finished product-Health Department isolate)

Listeria monocytogenes (from cleaning/hygiene room)

Figure 1. *Listeria monocytogenes* RiboPrint® Patterns. By comparing the patterns from isolates from raw ingredients to those from the Health Department's sampling of finished product, it was apparent that the source of contamination was not the supplier of the ingredients. The patterns from samples taken in the cleaning/hygiene room, however, showed investigators where they needed to focus their attention.

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