

DuPont Qualicon RiboPrinter® System

APPLICATION PROFILE

Crop Spoilage Has A New Enemy In The RiboPrinter® Microbial Characterization System

When produce is hit by aggressive and destructive microorganisms, the damage can be nearly impossible to control unless growers are able to contain the contamination and save unaffected lots. Having the DNA fingerprints of dangerous pathogens readily available is one of the best ways to know when and where they show up. A custom identification library of Most-Wanted—or maybe Unwanted—organisms can be the most effective tool in a laboratory's arsenal of defense.

Nearly 30 percent of the annual world mushroom crop spoils before it ever reaches the market and the rot responsible for the damage costs the industry an estimated \$276 million.

One organism that has been linked to spoilage or “blotch” is the virulent plant pathogen, *Pseudomonas tolassii*, an organism which spreads like wildfire from shed to shed and soil to soil. *P. tolassii* appears occasionally in compost and, once established, is likely to infect an entire crop and wipe out a grower's seeding. The organism is well known to the industry as is its reputation for being hard to differentiate from other *Pseudomonas* strains when searched for using traditional biochemical-based testing assays.

RiboPrint® Patterns Identify the Organism

A specialist laboratory serving the mushroom industry approached Qualicon, Inc. in hopes that the company's technology could improve the lab's ability to definitively and quickly identify the organism. If *P. tolassii* could be detected efficiently, the lab's microbiologists reasoned, there was a better chance of isolating contaminated areas and effectively cleaning production facilities to eradicate the organism.

Qualicon™ worked with the laboratory to build a custom identification library of *Pseudomonas* for the RiboPrinter® Microbial Characterization System. The resulting database allowed the lab to clearly and easily distinguish *P. tolassii* from the large number of *Pseudomonas* strains. The lab's customers were then able to target decontamination before the organism could do additional damage.



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Gaining Control

While it is well known that the horticulturist's ability to successfully control plant pathogens can make the difference in a crop's viability, complex and subjective methods of microbial analysis have made control elusive. By using the unique, database-building capabilities of the RiboPrinter® Microbial Characterization System, those who monitor these organisms can quickly customize the system to the needs of their industry. A customized library of organisms of interest provides the user with a definitive, fast and easy method for averting crop loss and facility contamination.

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