

Maximizing freshness and extending shelf life in microgreens with SureTect Real-Time PCR System



Valerie Vivian-Rogers, Microbiology Laboratory Manager at Florida Urban Organics, with the small footprint SureTect system

An innovative, certified organic aquaponic farm in Fort Myers, Florida, Urban Organics focuses on growing the freshest, most nutritious food possible. The nature of their products, lettuce and microgreens with a short shelf life, requires a fast method for pathogen testing to allow rapid product release and maximize freshness for their customers.

Safety is of paramount importance. Florida Urban Organics was the first organic farm in the US to achieve QCS (Quality Certification Services) certification for Organics and Global G.A.P (Global Partnership for Good Agricultural Practice) certification.

The team used the Thermo Scientific™ SureTect™ Real-Time PCR System with the Thermo Scientific™ SureTect™ Salmonella Assay, and have recently purchased the Thermo Scientific™ SureTect™ E. coli O157:H7 Assay. By implementing the SureTect system, they have gained one week of shelf life and can guarantee three weeks' shelf life for the lettuce in stores.

Valerie Vivian-Rogers, Microbiology Laboratory Manager, at Florida Urban Organics tells us more:

What is Florida Urban Organics?

"We grow lettuce, microgreens and aquaponic (tilapia) on 2.2 acres. We use one-tenth the space of a traditional farm, with 85% less water. Microgreens are nutrient-and-flavor-rich powerhouses. Essentially tiny versions of more mature edible vegetables, the compact plants contain up to six times the amount of vitamins and carotenoids than their larger counterparts."

Our customers are 80% food service (local and regional restaurants) and 20% retailers (local and regional grocery stores)."

What does Global G.A.P. certification mean to you?

"Global G.A.P. certification opens valuable new markets, and helps satisfy the food safety and sustainability specifications of retailers and buyers. It assures our customers that we follow good agricultural practices for food safety and that our environmental management practices meet GLOBAL G.A.P. requirements. Global G.A.P. is a Global Food Safety Initiative (GFSI) recognized standard."

What is your role in the laboratory?

"My team tests produce and water for pathogens, ensuring none get into the food stream. We also develop and implement methods for testing and sampling, quality and food safety systems for the farm, and manage audits and certifications."

How is the SureTect system being used in the laboratory?

"We use the SureTect system to rapidly determine the presence/absence of the pathogens, allowing us to quickly release the majority of products, while any presumptive positive results can be sent for confirmation."

Mainly we test for *Salmonella* in products, *E. coli* O157:H7 and occasionally *Listeria* spp. (water only as part of environmental monitoring). We have a positive release policy for *Salmonella* and *E. coli* O157:H7."

What specific features (assay, instrument or software) do you like most about the system?

"Reliability of the method/results and the small instrument footprint that uses minimal bench space. The method is easy-to-use: single enrichment, reduced hands-on, with less training compared to long FDA-BAM cultural methods. The software interface is also very intuitive."

How do these features benefit your laboratory?

"Faster time to results is key: next day verses three days. Also the reduced hands-on time, particularly for the *Salmonella* method, is a benefit. The SureTect system (assay setting & software) is easy-to-use and train new lab staff on."





What was your impression of the conversion process from the cultural method (FDA-BAM) to the SureTect system?

“Because of the features of the SureTect system and the support received, the conversion from the cultural method has been easy.”

What was your impression of the on-site training and subsequent support?

“Our Thermo Fisher Scientific account manager was great at initial installation and training. We’ve also been very pleased with the service provided so far both by the customer support and the technical service teams.”

What have we done that made the biggest difference for you or your laboratory?

“The SureTect system’s greatest benefit to us is the faster time to results, enabling us to reduce inventory storage and move products to market more quickly. This extends their shelf life from two weeks to three weeks for grocers and restaurants, our main customers. By implementing the SureTect system, we have gained one week of shelf life and can guarantee three weeks’ shelf life for the lettuce and microgreens at the store or restaurant. We are able to claim maximum freshness, cleanliness and reliability for our products.”



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