

STERILEX ULTRA STEP VS LIQUID QUAT FOOT BATHS CASE STUDY

AREA OF CONCERN

Sterilex was contacted by a new hydroponic growhouse looking to explore solutions for powder chemistry at critical control points.

ISSUE

The facility does not have many drains, was concerned that standing water from liquid sanitizers was contributing to microbial growth, and was conscientious about how much water it was using. Additionally, the facility does not have a clean break for hygienic zoning and was concerned about cross-contamination from forklifts entering and exiting the growhouse.

BACKGROUND

The facility was using a liquid quaternary ammonium (quat) product in foot baths as the only intervention at entryway critical control points. The facility regularly performs environmental monitoring (EMP) swabbing and is primarily concerned with *Salmonella* and *Listeria*, and struggles with fungal growth.* The customer was looking to reduce water usage and was interested in trying a powder product.

* On non-public health surfaces

“ We are extremely pleased with the results from our Sterilex Ultra Step trial. In addition to our microbial testing showing a **near total reduction of microbes on footwear**, the product is simply easier to use. We've **reduced our labor by >75%** with its easy application and maintenance. Additionally, we feel it is an **excellent option for forklift traffic**, areas without access to drains and for areas that must stay 100% dry all the time.

— Food Safety and Quality Manager

RECOMMENDATIONS

Sterilex proposed the following actions:

1. Apply Sterilex Ultra Step to the mat/pan at a rate of 3.7–7.4 oz (105–210 gm) of powder/100 ft² (9.3 m²) which contains no more than 0.97 fl oz of water per ft². (For a 3 x 5 ft floor mat, apply 0.5–1 lb of Sterilex Ultra Step—an estimated 1–2 scoops.)
2. If the mat/pan contains more than 0.97 fl oz of water per ft², apply additional Sterilex Ultra Step to maintain a concentration equal to a minimum of 4.9 oz/gal of water (37 gm/L).
3. Sterilex Ultra Step should be spread in the mat/pan to ensure full coverage.
4. Apply fresh powder when the product becomes visibly dirty or when there is no product left.**

** Surface containing no more than 0.97 fl oz (28 mL) of moisture per square foot

RESULTS

Microbial Testing

Prior to Sterilex Ultra Step application, the plant swabbed and recorded the data for Aerobic Plate Count (APC) and *Enterobacteriaceae* in their entryway foot pans using only a liquid quat. The growhouse suspended use of liquid quat and applied Sterilex Ultra Step per the above recommendations.

The data that follows clearly illustrates that Sterilex Ultra Step controlled APC and *Enterobacteriaceae* bacteria better throughout the day than liquid quat. After applying Sterilex Ultra Step, the facility saw a complete reduction in APC on footwear and forklift wheels 10–20 ft away from footbaths.

ANAEROBIC PLATE COUNTS

	Liquid Quat Footbath		Sterilex Ultra Step	
Location Name	Baseline Data Immediate Results	Baseline Data 1 Wk After Application	Post Trial Results Immediate Results	Post Trial Results 1 Wk After Application
Forklift Wheel	30,000	1,700	<10	<10
Footwear #1	24,000	15,000	<10	<10
Footwear #2	24,000	160	<10	<10
10 ft from Application	N/A	N/A	<10	<10
20 ft from Application	N/A	N/A	1,600	<10

ENTEROBACTERIACEAE COUNT

	Liquid Quat Footbath		Sterilex Ultra Step	
Location Name	Baseline Data Immediate Results	Baseline Data 1 Wk After Application	Post Trial Results Immediate Results	Post Trial Results 1 Wk After Application
Forklift Wheel	<10	<10	<10	<10
Footwear #1	<10	190	<10	<10
Footwear #2	<10	<10	<10	<10
10 ft from Application	N/A	N/A	<10	<10
20 ft from Application	N/A	N/A	1,600	<10

CONCLUSIONS

This case study suggests that Sterilex Ultra Step is effective at killing food pathogens on the floor and reducing fungal growth on non-public health surfaces.

In addition to the positive microbial testing results, the facility also experienced some impactful operational efficiency savings:

1. Reduced labor >75% by switching to Sterilex Ultra Step verses the liquid quat in floor mats
 - o The facility was cleaning their floor mats daily. Now, they only need to clean them 1x per week.
 - o Employees no longer need to mix or titrate solution.
2. Saved 14 labor hours per week
 - o Employees only spend 3 hours per week cleaning and maintaining floor mats.
3. Labor cost savings – approximately \$180/week or \$9,360/year