

# Mobile Devices, Mobile Risk

## Contamination Risks from Portable Electronics in Food Processing

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A Whitepaper Authored by:

**cleanslate** UV

In Partnership with:



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## Overview

Food processors have made significant investments in personal disinfection. Hand hygiene is crucial, but additional steps, such as clothing and shoe changes, are becoming standard in HACCP plans.

Unfortunately, there is an entire category of items that consistently slip past these critical control points, immediately recontaminating hands and posing a cross-contamination risk for as long as they are on the production floor.

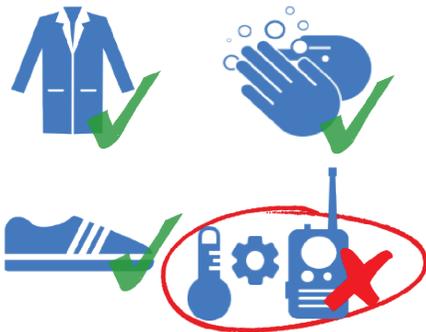
These items are RT radios, tablets, smartphones and other portable devices.

### This Whitepaper Explores:

- **The source and scope of this problem**
- **The Yashili Dairy case study, and how they managed this risk**
- **What it means for mobile device use and adoption in food facilities**

## 1. Source & Scope of the Problem

Food processors have put a significant emphasis on hand hygiene and other HACCP protocols as individuals enter a production area. Mobile devices were often not accounted for during the development of these protocols. This has created an unaddressed and growing risk.



Even when a facility does recognize the 'trojan horse' risk from mobile devices, there are no solutions on the market capable of quickly and effectively killing food-borne pathogens on devices without harming those devices.

Whether you look at the protocols most facilities have in place or the disinfection technologies they have on-site, mobile devices have been overlooked. Yet, these devices are carried into production areas by staff, consultants, and auditors.

The implications here are stark. In a recent food processing case study, it was discovered that 50% of staff were carrying mobile devices, and that 40% of all devices were contaminated with Enterobacteriaceae. Moreover, phones have been proven to have an incredibly high re-contamination coefficient. In academic studies, phones had a 45-66% cross-contamination rate to human hands<sup>1</sup>. This compares to a 6% cross-contamination rate when handling raw hamburger meat.

***"In academic studies, phones had a 45-66% cross-contamination rate to human hands"***

1. Rusin, P., Maxwell, S. and Gerba, C. (2002), Comparative surface-to-hand and fingertip-to-mouth transfer efficiency of gram-positive bacteria, gram-negative bacteria, and phage. Journal of Applied Microbiology, 93: 585-592. doi:10.1046/j.1365-2672.2002.01734.x

## 2. The Yashili Case Study

**Facility Profile:** Yashili Dairy is a state-of-the-art dairy facility located near Auckland, NZ. It is a 'new build' and reached full capacity in late 2018 with over 400 staff.

**Problem:** The Quality Improvement team wanted to increase the use of tablets to increase plant efficiencies, but identified new and existing mobile devices as a potential HACCP gap.

**Study Setup:** Eight week pilot of CleanSlate UV technology to enable disinfection of mobile devices, deployed at primary 'red line' control point. Pre/post efficacy testing on devices conducted by in-house microbiologists using 3M Enterobacteriaceae plates.

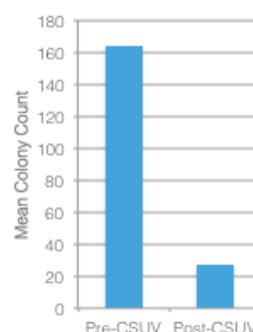
### PRE-CleanSlate Mobile Device Test Results:

- 38.7% of devices positive for Enterobacteriaceae
- 48% were "Too Numerous to Count" for general bacteria

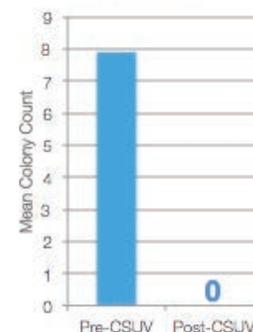
### POST-CleanSlate Mobile Device Test Results:

- 100% reduction in Enterobacteriaceae on devices
- 83.6% reduction in general bacteria (via aerobic plates)

Aerobic Plates



EB Plates

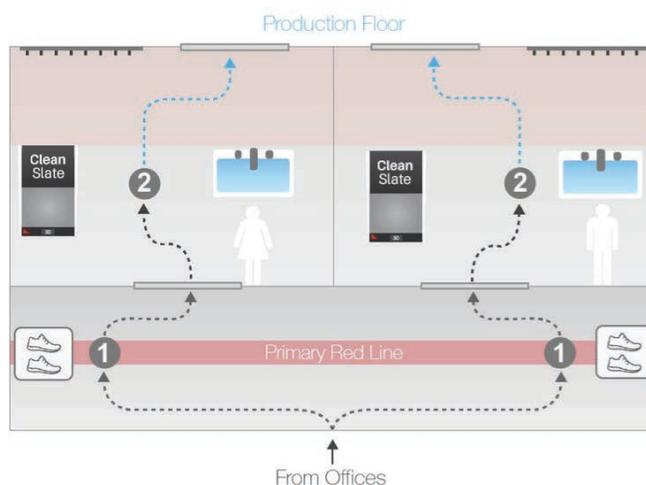


### Why It Was Successful:

CleanSlate UV was integrated into the hand hygiene stations in both changerooms at the primary red line.

With a 30 second cycle\* that can disinfect tablets, RT radios, and other devices, it fit seamlessly into existing protocols.

*\*2019 product upgrade resulted in new 20 second cycle with no loss in efficacy*



- 1 Shoe removal  
Jewelry removal
- 2 Hand hygiene  
Device sanitization  
Facility boots
- 3 Enter plant

## 3. Implications for Device Adoption

Yashili proves that the risks mobile devices pose can be easily and effectively managed if the proper disinfection tools are available. These mobile technologies - from tablet-based quality systems to plant-wide communication and inventory management - offer significant upsides to food processors. But the cross-contamination risk posed by mobile devices must be tackled alongside these broader quality and efficiency challenges.

The CleanSlate can sanitize a wide range of devices, has been proven to be effective and HACCP friendly, and costs less than using powerful chemical wipes that would harm these sensitive devices.

Interested in learning more or trialing the CleanSlate in your facility? Get in touch today.

### USA

1170 Main St,  
Buffalo, NY, USA  
14209

### Canada

70 Richmond St E, Suite 201  
Toronto, ON, Canada  
M5C 1N8

### cleanslateuv.com

sales@cleanslateuv.com  
+1 (877) 553-6778