



REDEFINING BURGER PATTY SAFETY:

A Case Study on Biofilm Eradication with ProvaCharge™ Foam

AREA OF CONCERN

Achieving superior microbial safety in Less Than Thoroughly Cooked (LTTT) beef burger production is critical. Sterilex was approached by Select Poultry & Meat Ltd to enhance their current food hygiene procedures to target biofilm and secure more LTTT contracts.

ISSUE

Biofilms, complex structures formed by microorganisms, pose a significant concern as they harbour harmful bacteria and compromise the quality and safety of food products. Traditional hygiene methods, including chlorine foam and terminal sanitisers, proved effective but lacked the specialised biofilm-targeting capabilities offered by ProvaCharge Foam.



Indicon® Gel was used to rapidly identify biofilm bacteria in locations around the plant.

BACKGROUND

While the efficacy and microbial results of their current protocols were strong, Select Poultry & Meat Ltd aspired for excellence in order to secure more LTTT contracts. The integration of ProvaCharge Foam into existing operations was seamless. Staff were trained on the supplementary protocol to integrate ProvaCharge Foam.

TREATMENT PLAN

ProvaCharge Foam was introduced into the current SSOP as a weekly application in place of the terminal disinfectant to penetrate biofilm and eradicate biofilm bacteria. ProvaCharge Foam was applied using a 95 L standard air-powered foaming unit.

Weekly Application of ProvaCharge

1. Clean all surfaces with a chlorine foam followed by a water rinse.
2. Prepare a solution containing 17 mls **ProvaCharge P500** and 100 mls of **ProvaCharge F100** for every 883 mls of water in a portable foaming unit.
3. Generously foam equipment to ensure thorough coverage. The product should maintain a minimum contact time of 10 minutes.
4. Rinse surface thoroughly with potable water.
5. Complete steps 3 and 4 a total of 5 times. Prepare additional solution as needed.
6. Rinse with potable water.

RESULTS

Implementing ProvaCharge Foam into their current hygiene protocol demonstrated compelling results.

Biofilm Eradication

ProvaCharge’s weekly application, in conjunction with traditional chemistry, led to a profound reduction (>4.26 mean log reduction) in microbial counts by targeting pathogens within protective biofilms.

Consistent Weekly Application

The weekly application of ProvaCharge became a proactive and effective measure, breaking biofilm barriers and ensuring sustained microbial safety.

Securing New LTTC Contracts

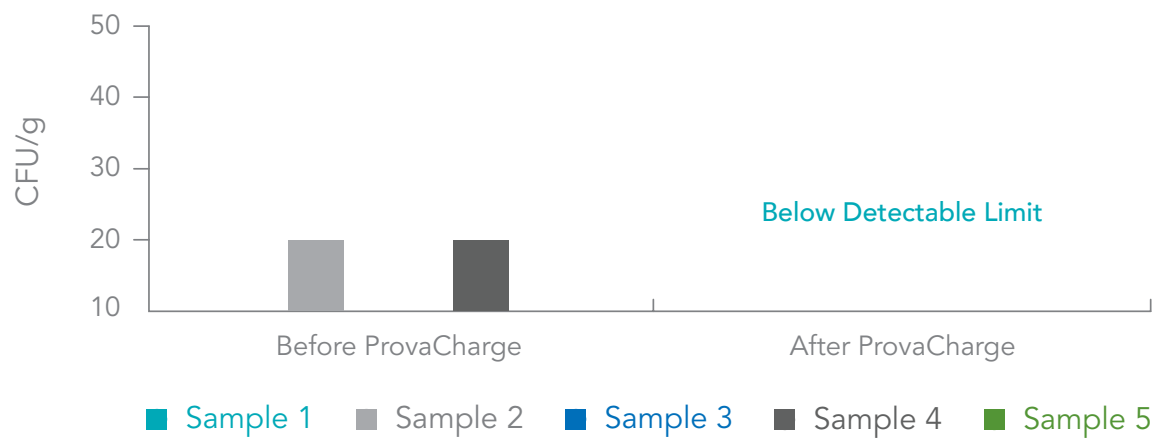
The combined approach not only elevated microbial safety but also positioned our client as an industry leader, securing new LTTC contracts and reinforcing their commitment to food safety.

E.coli Data (CFU/g)

	BEFORE PROVACHARGE	AFTER PROVACHARGE
Sample 1	<10	<10
Sample 2	20	<10
Sample 3	<10	<10
Sample 4	20	<10
Sample 5	<10	<10

* Lower detection limit = 10

E. coli Count from LTTC Burger Samples Before + After ProvaCharge Application

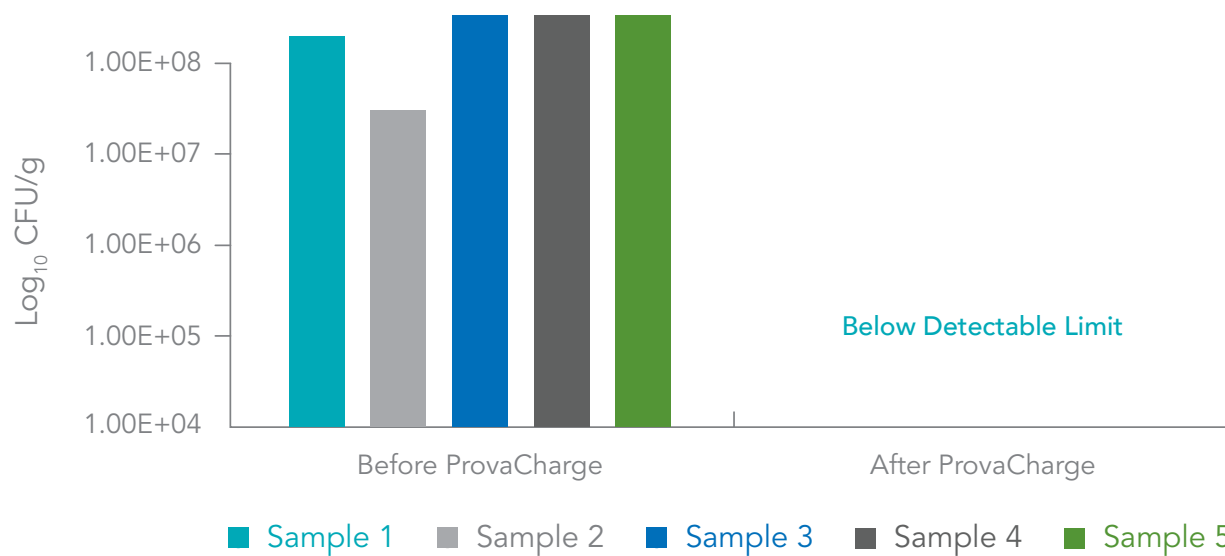


TVC Data (Log₁₀ CFU/g)

	BEFORE PROVACHARGE	AFTER PROVACHARGE
Sample 1	2.16E+08	<1.00E+04
Sample 2	3.30E+07	<1.00E+04
Sample 3	>3.00E+08	<1.00E+04
Sample 4	>3.00E+08	<1.00E+04
Sample 5	>3.00E+08	<1.00E+04

* Upper detection limit = 3.00E+08 and lower detection limit = 1.00E+04

Total Viable Count (TVC) from LTTC Burger Samples Before + After ProvaCharge Application



* Y-axis on both charts start at lower detectable limit

CONCLUSIONS

This case study underscores the synergy between ProvaCharge and traditional chemistry in LTTC burger patty production. The dual-application approach leveraged ProvaCharge's biofilm targeting capabilities, elevating microbial safety and showcasing the versatility of ProvaCharge as a valuable addition to existing practices in the pursuit of enhanced food safety.



Please contact us for more information.

UK: Building 4, Foundation Park, Roxborough Way, Maidenhead, UK SL63UD | +44 1628 274459 | support@sterilex.co.uk | www.sterilex.co.uk
EU: Halston 56 Dodder Road Lower Rathfarnham, Dublin D14 YW98, Ireland | +353 1 584 5884 | support@sterilex.eu | www.sterilex.eu

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