

# Research Notes

Passport Food Safety Solutions



## Finalyse reduced *E. coli* O157:H7 by 1<sub>Log</sub> on cattle hides.

### INTRODUCTION

The study examined the efficacy of Finalyse™ on *E. coli* O157:H7 on cattle hides using a commercial spray system and phage levels found in commercial facilities.

### STUDY OVERVIEW

- The experimental procedure was replicated two times
- Eighteen hide sections were used in each replicate — nine for control (water-sprayed) and nine for Finalyse-sprayed
- Cattle hides were placed on heating pads and marked in ~1,000 cm<sup>2</sup> areas
- *E. coli* O157:H7 bacteria (106/1,000 cm<sup>2</sup>) were applied to all squares and allowed to dry for ~60 minutes
- Three “before” samples were taken ~45 minutes after the bacteria were applied
- Finalyse or water (control) was then applied to the hide squares using the Finalyse Application System™
- Six “after” samples were taken ~45 minutes later
- The control (water-sprayed) samples were completed first followed by the Finalyse-sprayed samples
- All samples were collected using aseptic techniques. Standard microbiological techniques were employed as well as the utilization of common broths and agars for O157:H7



### RESULTS

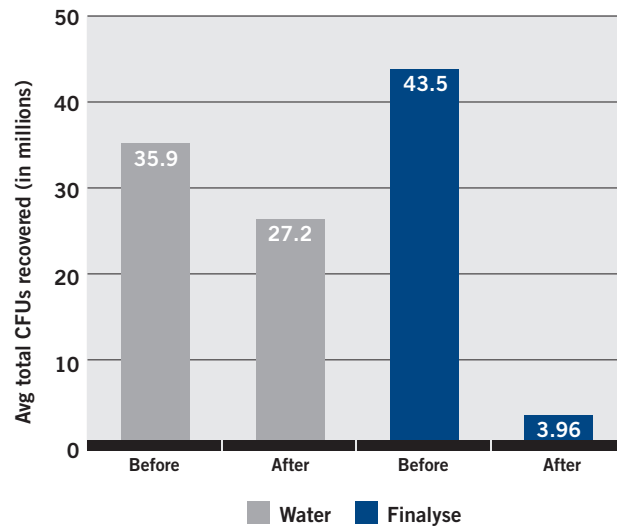
The Finalyse-sprayed hides showed ~1<sub>Log</sub> reduction of *E. coli* O157:H7 levels vs. the control (water-sprayed) hides in the combined replicates.

TABLE 1		Combined Results (Replicates Nos. 1 and 2)			
Treatment group	N	Avg total CFUs recovered	Std error	Min	Max
Water — before	6	3.59E + 05	6.06E + 04	1.66E + 05	5.77E + 05
Water — after	12	2.72E + 05	8.04E + 04	3.50E + 04	9.24E + 05
Finalyse — before	6	4.35E + 05	2.09E + 05	1.10E + 05	1.45E + 06
Finalyse — after	12	3.96E + 04	1.20E + 04	0.00E + 00	1.20E + 05

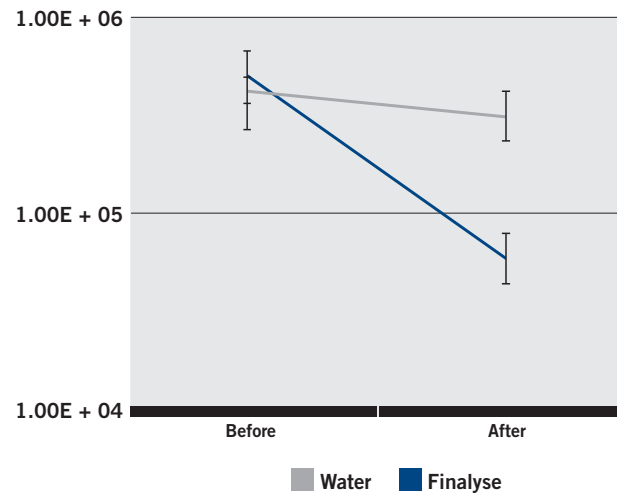
## CONCLUSION

The Finalyse Application System™ being used in commercial facilities was effective in reducing the *E. coli* O157:H7 load on inoculated cattle hides in a simulated model study.

**Figure 1:** Average total CFUs before and after Finalyse™ use vs. the control



**Figure 2:** Finalyse reduction of 1<sub>Log</sub> of *E. coli* O157:H7 vs. water



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1 Data on file. Industrial Hygiene Report Feb. 14, 2011.

2 Data on file. Industrial Hygiene Report Dec. 2, 2009.