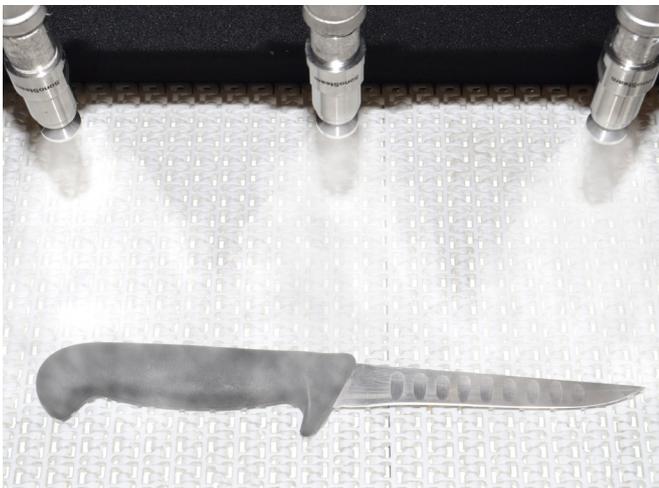


Decontamination of knives

SonoSteam treatment achieves 100% bacteria reductions within 1.0 second

Conclusion

SonoSteam, a chemical free treatment, achieves 100% decontamination on knives in 1.0 second. Due to the short treatment time they quickly regain their normal temperature. Protein residues do not stick to the knives and are easily washed off.



About the experiment

The knives, received from a Danish slaughterhouse, were naturally contaminated with meat residues from the slaughterhouse. The knives were tested for reduction in Enterobacteriaceae and Total Viable Count (TVC). SonoSteam MultiMini was used for the treatment of the knives, which was carried out in 1.0second. Each knife was treated individually. Re

sults, in the table below, show that total TVC reduction was achieved with a maximum initial Enterobacteriaceae and TVC level of 4.88 and 6.40 log units, respectively.

The knives quickly regain their normal temperature and protein residues do not stick to them, making it possible to run the treatment during production.

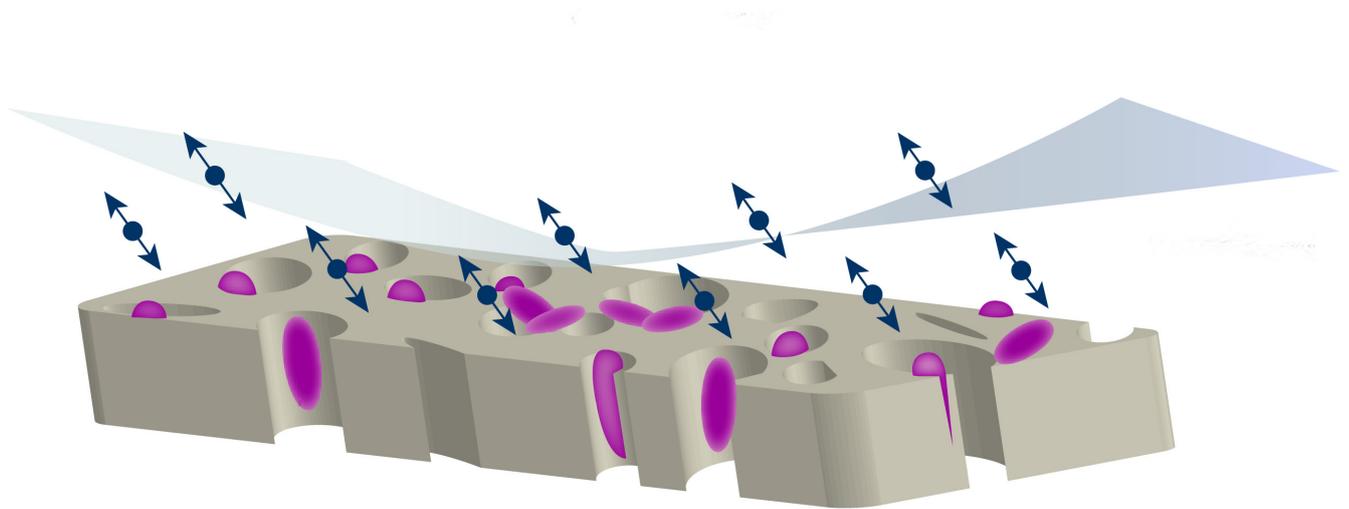
N=3	Average level before treatment Log 10 CFU/4cm ²	Average level after treatment Log 10 CFU/4cm ²	Reduction %
Enterobacteriaceae	4.88	0	100
TVC	6.40 ¹	0	100

¹SonoSteam treatment of naturally contaminated knives; 6.40 log CFU/12cm² is equal to 2511886 bacteria per 4 cm² handle.



SonoSteam disinfection treatment

The technology combines a quick burst of steam delivered at an ultrasonic frequency. It has proved to be a highly effective chemical-free microbial intervention.



What makes the steam-ultrasound combination so effective?

SonoSteam is a chemical free decontamination process designed for food and non-food surfaces. SonoSteam technology applies the combination of steam and ultrasound to achieve rapid and enhanced treatment within seconds.

SonoSteam processes use the “catalyzing” effect of ultrasound that is able of disrupting the laminar sublayer and allow steam to reach the surface in super fast rates. This means that microbes that are present on the surface are exposed to high concentration of intensified heat in the form of dry steam. Microbes inside the microstructures and pores are also affected, making this treatment much more effective than steam processes alone.

Thanks to the “catalyzing” effect of the ultrasound, such processes can occur within just a second. At such fast rates, microbes are killed before heat can penetrate and thermally damage the organic material.

