

## Decontamination of white cheese

SonoSteam treatment achieves 98% yeast reduction within 1.0 second

### Obtained results

*SonoSteam is a chemical free disinfection treatment which has shown to achieve more than 98% log within only 1.0 second on white feta cheese. The short treatment does not affect the product in regard to sensory changes.*



### About the experiment

Yeast contaminations are often a problem that occurs in production areas in high concentrations and eventually ends up on the cheese product. SonoSteam treatment was investigated as a potential disinfection treatment that can be used directly on the cheese block in a continuous treatment, thanks to the fast and effective treatment options. In this study, feta cheese cubes were investigated with SonoSteam treatment using only 1.0 second at 95°C. The main focus of this study was to reduce yeast contaminations on feta cubes and at the same time avoid sensory changes. Feta cubes were placed

inside the SonoSteam MultiMini equipment specially designed for continues treatments. The cubes were not treated for more than 1 second. Microbial analysis was performed using the stomacher blending method. Cheese cubes that were kept in the fridge for 2 days at 5°C had a naturally growth of yeast with levels around 1.0 log units. SonoSteam treatment of 1.0 second achieved total yeast reductions. Yeast grew to levels around 3.0 log units when incubated at 25°C for 1 day. At such high levels, comparably high reductions of 1.7 log units were achieved. No sensory impact were found.

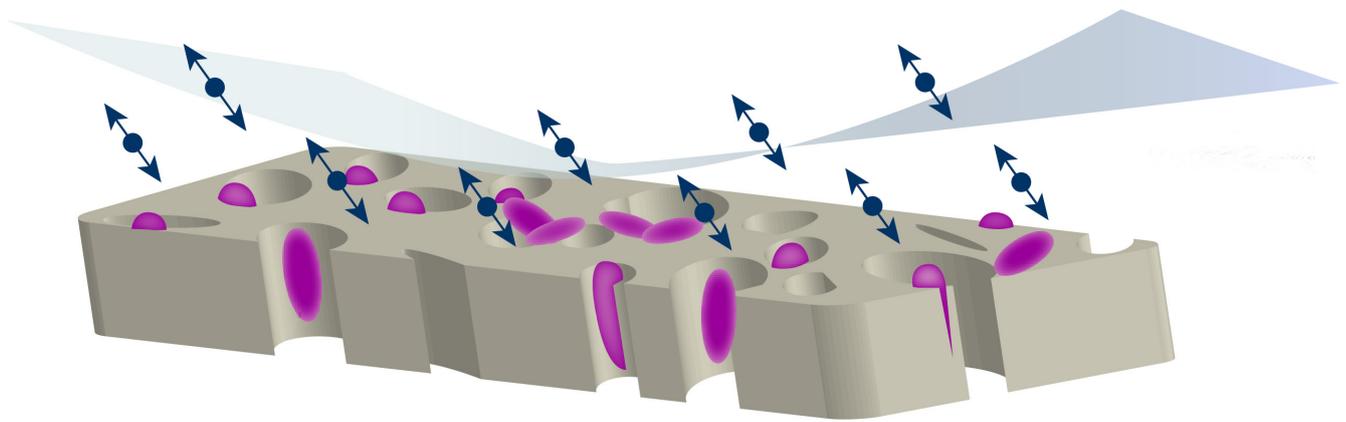
Table 1:

Yeast	Average level before treatment Log 10 CFU/g	Average level after treatment Log 10 CFU/g	Achieved reduction
2 days at 5°C	0,72	0	0,72
1 day at 25°C	2,76	1,10	1,65



## 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.

