

Continuous Antimicrobial Blue Light in Food Environments: A Multi-Site Case Study

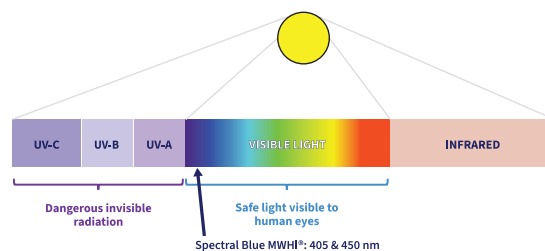
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BACKGROUND

Food environments continue to face microbial and spoilage risks because traditional hygiene methods are applied intermittently rather than continuously. Recent study by Nofima highlighted the challenges of keeping processing equipment clean. **Spectral Blue MWHI®** is a new chemical-free, UV-free, touch-free, and non-thermal method to reduce microbiological surface contamination. It utilizes 405 and 450 nm antimicrobial blue light (aBL) wavelengths. Recent customer cases demonstrate its performance for processing environments and equipment.



SITE 1: AIRBASE KITCHEN

Location: Ørland Air Station, Norway, a NATO airbase hosting Norwegian and allied forces.

Deployment area: Kitchen with preparation, cool storage and packing areas. Aim was to provide an alternate mechanism of action to support chemical disinfection.

Blue light system:

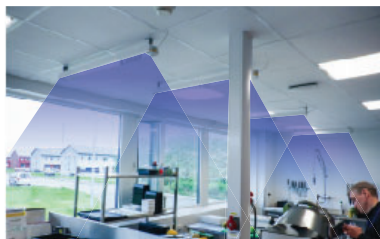
- Spectral Blue L200 devices mounted on the ceiling.
- Exposure time: Overnight in the kitchen and 24/7 in the cool storage.

Sampling:

- Surface samples in kitchen.
- Visual inspection of cold storage.

Results:

- Surface hygiene safeguarded with an automatic method.
- Less mold observed on food in cold storage, reduced food waste.



Kitchen space, blue light illustrated for visualization purposes

SITE 2: FISH PROCESSING

Location: A high-volume rainbow trout processing site in the Nordics.

Deployment area: Trout grading and sorting line. Aim is to reduce *Listeria* contamination on the equipment.

Blue light system:

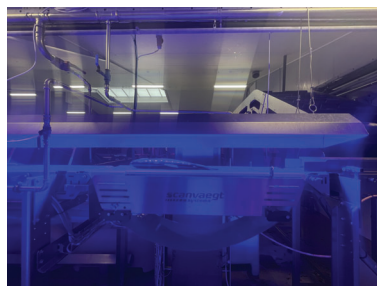
- Spectral Blue L100 devices mounted above the belt system.
- Exposure time: 24/7, during production and after production.

Sampling:

- *Listeria spp.* test kit, on average 10 samples per week from grader, belt and chute surfaces.

Results:

- 50% reduction in positive *Listeria* samples during production compared to previous production season.



Grading belt system

SITE 3: MEAT PROCESSING

Location: A Nordic meat processing facility producing sausages and cold cuts.

Deployment area: A meat dicing machine with hard-to-clean surfaces and blades that have persistently shown contamination.

Blue light system:

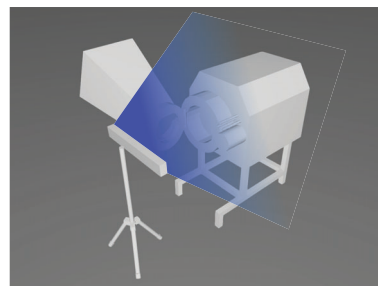
- Spectral Blue L100 devices on removable tripods.
- Exposure time: During weekends.

Sampling:

- Total viable count and Enterobacteriaceae on product.

Results:

- Total bacteria decreased by ~2 log and Enterobacteriaceae by ~4 log.
- Microbiological quality of the products improved all the way to the use by date.



Dicing machine, illustration

CONCLUSIONS

Modern antimicrobial blue light delivers multiple outcomes at once by eliminating harmful microbes, reducing spoilage, and extending freshness. It also lowers food waste and works continuously without operator involvement, providing a multi-benefit hygiene solution for processing and food service environments.

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