



MEASUREMENT REPORT

Testing the antibacterial efficiency of *SolvAir_UNI* unit in a microbiological model system

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Test period: 20.07.2020. – 20.09.2020.

The experimental system:

- *E. coli* JM109 strain was used for the experiments.
- The “inoculated-cellophane process” experimental system was developed and used for the tests.
- The active surfaces (internal trays) were activated for 36 hours prior to the experiments.
- A tenfold dilution series of five steps was prepared from overnight culture of *E. coli* JM109, the last three dilutions (10^{-3} , 10^{-4} , 10^{-5} dilutions) were added to the surface of cellophane sheets laid on LB medium. Droplets were dried for 15 min
- Inoculated cellophanes were left on the active surface of the equipment for 60, 30, 20, 10 and 5 min with or without illumination. In the case of long treatment times, to aid the proper adhesion of the cellophane disks, the evaporating water was continuously replenished by wetting contacting strips of filter papers.
- After the treatments, the cellophanes were removed from the active surface and transferred to the surface of LB medium. The plates were incubated at 37 °C for 12 hours.
- As a control, inoculated cellophane sheets kept in a Petri dish (without lid) for 0 and 60 minutes were used.
- The experiments were performed in 4 replicates.

Evaluation:

- After 60 minutes of treatment with illumination, test surfaces were sterilized, but the antibacterial effect could be detected even after 30 minutes.
- It proved, that the active surface itself has some antibacterial effect, which is clearly enhanced by illumination.

In summary, the bacterial cells in the microscopic liquid droplets were inactivated (killed) by the illuminated active surface.

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