



Preventing dispersion of microbes with Far-UVC

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VTT Oy

Far-UVC radiation

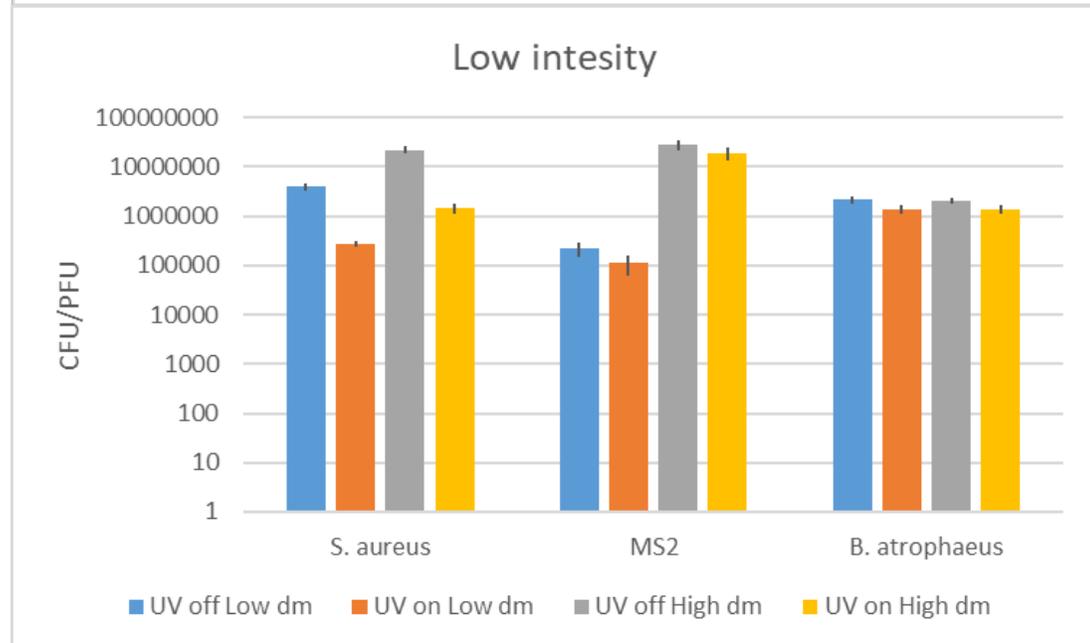
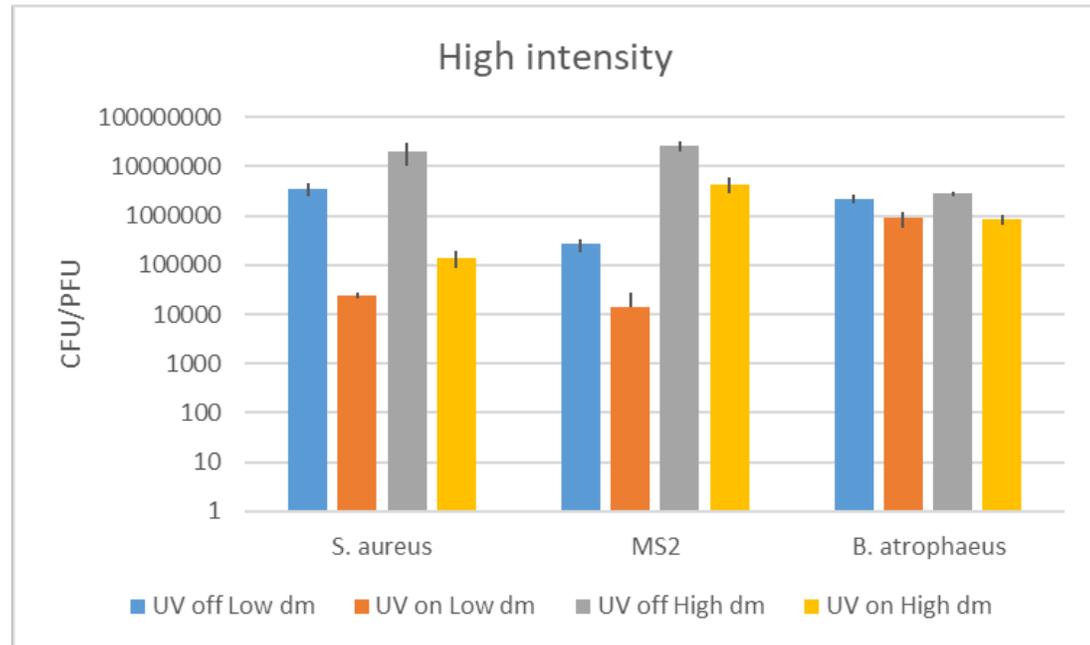
- Shortwave UVC-radiation
- Claims
 - Effective in inactivating microbes
 - Absorbs on the outer layers of skin and eyes
 - Does not penetrate deep enough to harm DNA
- We studied the inactivation efficacy with
 - *S. aureus*
 - MS2-virus
 - *B. atrophaeus*

Setup

- 2.3 m³ stainless steel tank
 - HEPA-filtered airflow from top to bottom
 - Well mixed airspace
- 20 W KrCl-excimer lamp
- Tests
 - High and low intensity
 - High and low dry matter



Results



UV safety

- Dimensionless "harm factor"*
 - 254 nm: 0.5
 - 222 nm: 0.13
- 222 nm efficacy on *S. aureus* ~50% when compared to 245 nm
- 222 nm ~25% as harmful as 254 nm

* Valtioneuvoston asetus työntekijöiden suojelemiseksi optiselle säteilylle altistumisesta aiheutuville vaaroilta (146/2010)



Conclusions

- Effective for **some** microbes
 - S. aureus, influenza, corona...
- Not a miracle cure
- Suitable for airspace disinfection
 - Almost immediate effect

Thank you!

- Contributors
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