

Use a protective antimicrobial coating to reduce the microbial load in public transportation – results from a real scenario study

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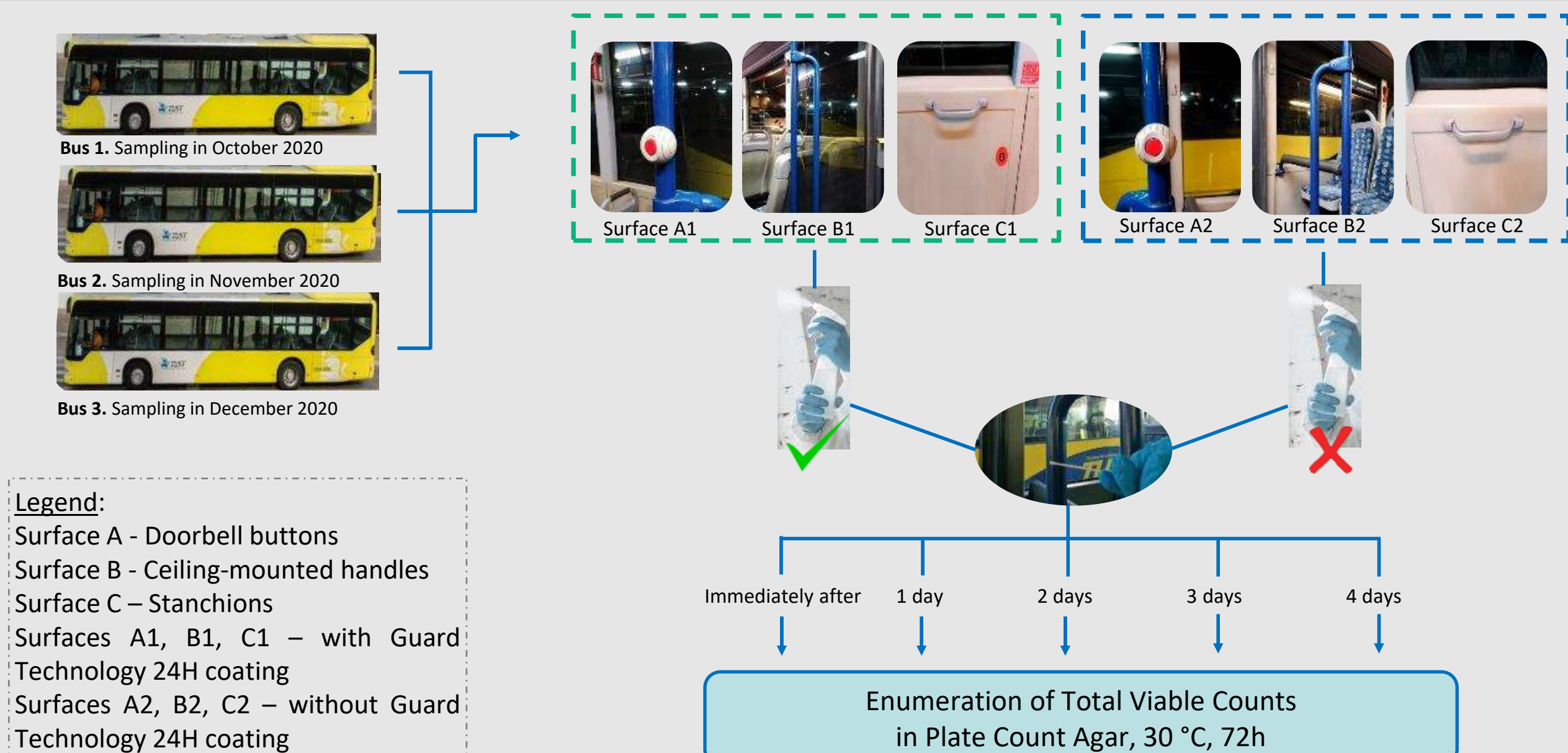
Key findings:

- The antimicrobial coating “Guard Technology 24H” prevents the spread of contaminants in public spaces for at least 24 hours

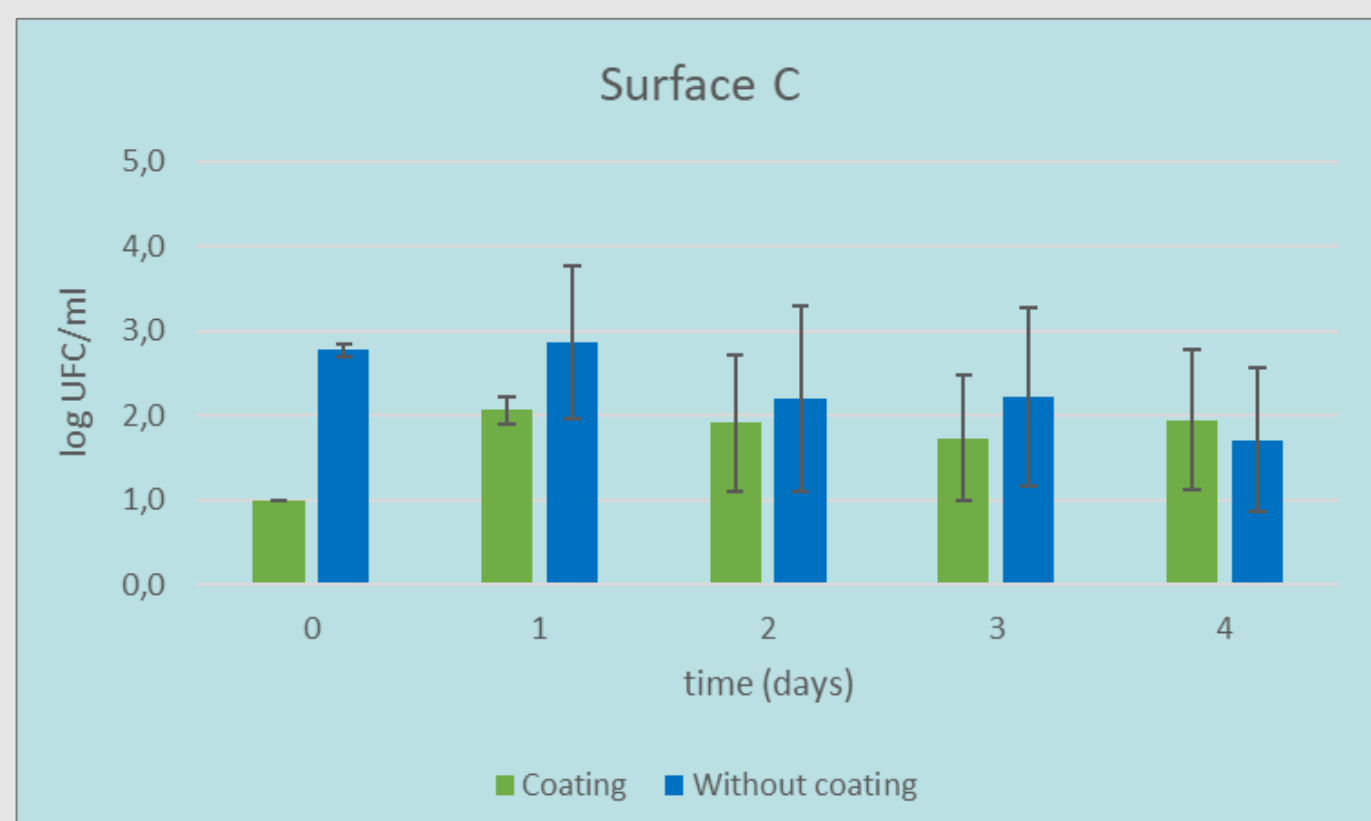
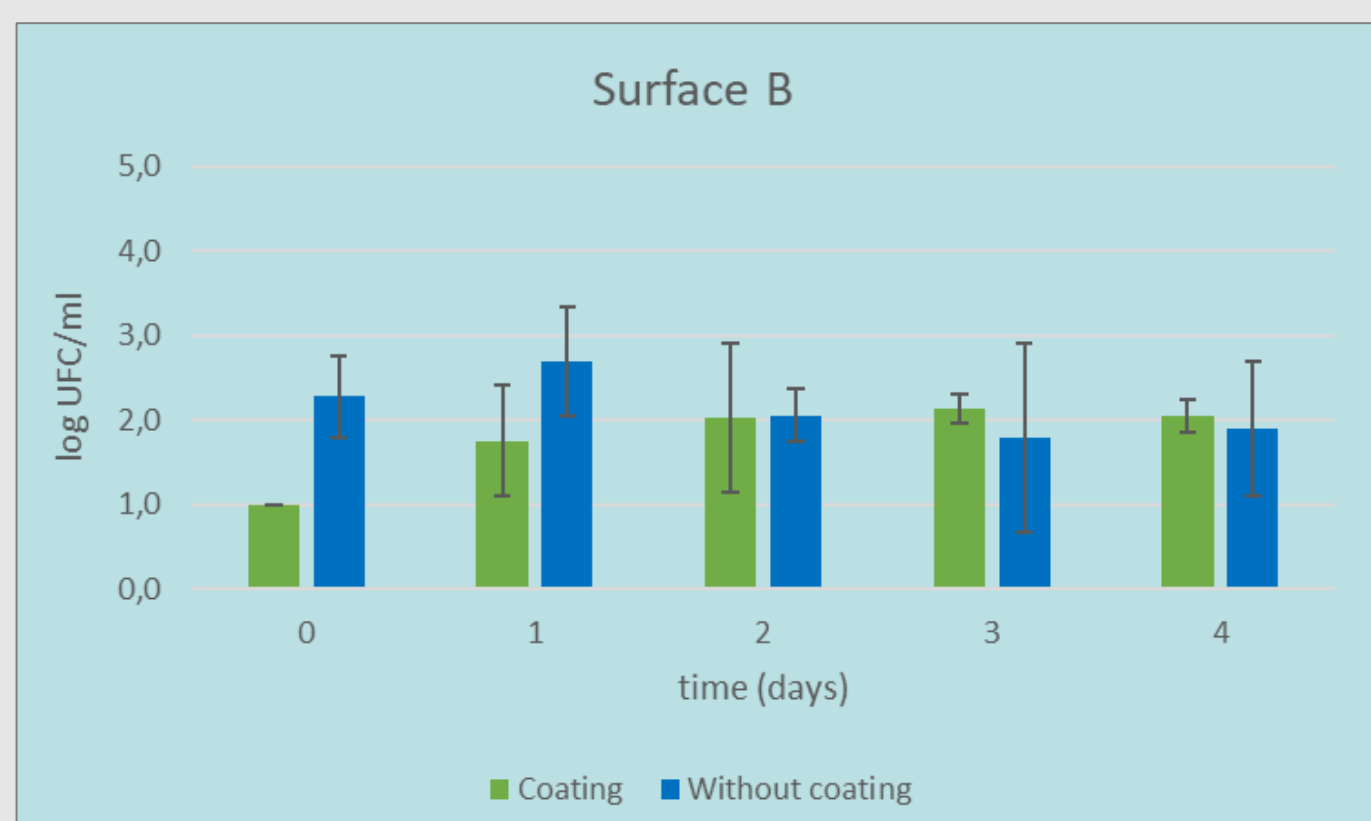
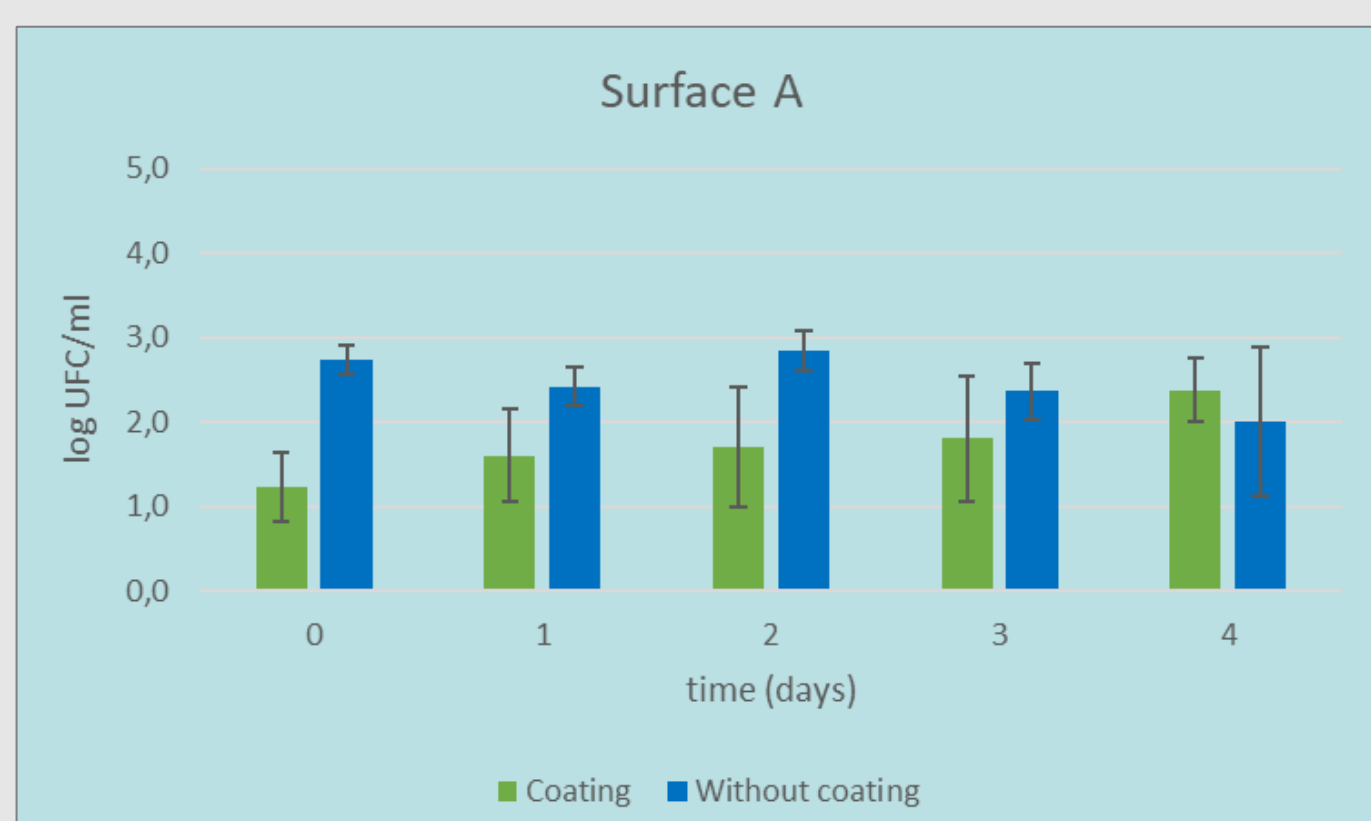
Background

- The need to disinfect and sanitise private or public spaces, as a consequence of the pandemic caused by the SARS-CoV-2 virus, has raised new questions and demands in the sanitary field, including new cleaning and sanitising practices.
- Public transportation is one of the sectors most impacted by this new reality (Tirachini et al., 2020).
- The greatest cause for concern in terms of infection risk is related to the high flow and close contact between individuals and constant sharing of surfaces (Moreno et al., 2021).
- In fact, human pathogens have been detected in surfaces highly touched in public transportation (Hsu et al., 2016; Otter and French, 2009).
- In this study, the antimicrobial activity of the Guard Technology 24H coating (CTEQ – Indústria Química, S.A., Portugal) on surfaces of public buses during their normal daily operating period was investigated.

Materials and Methods



Results



- Significant differences ($p = 0.001$) between treated and untreated samples, but only for day zero ($p < 0.05$) and day 1 ($p < 0.05$)
- Significant differences ($p = 0.152$) between treated and untreated samples, but only for day zero ($p < 0.05$) and day 1 ($p < 0.05$)
- Significant differences ($p = 0.036$) between treated and untreated samples, but only for day zero ($p < 0.05$) and day 1 ($p < 0.05$)

Conclusions

- It was concluded that the application of Guard Technology 24H significantly reduces the total microbial load on bus surfaces in real context - naturally contaminated surfaces and non-controlled conditions:
 - immediately after application (86.3% to 98.8%)
 - and for at least 24 hours (72.7% to 98.7%)
- These are promising results, concerning the prevention of the spread of contaminants in public spaces
- This antimicrobial coating deserves to be further investigated in other real-life scenarios where environmental microbial contamination is a cause for concern (e.g., healthcare settings)

Acknowledgements

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