

School ATP Testing Results

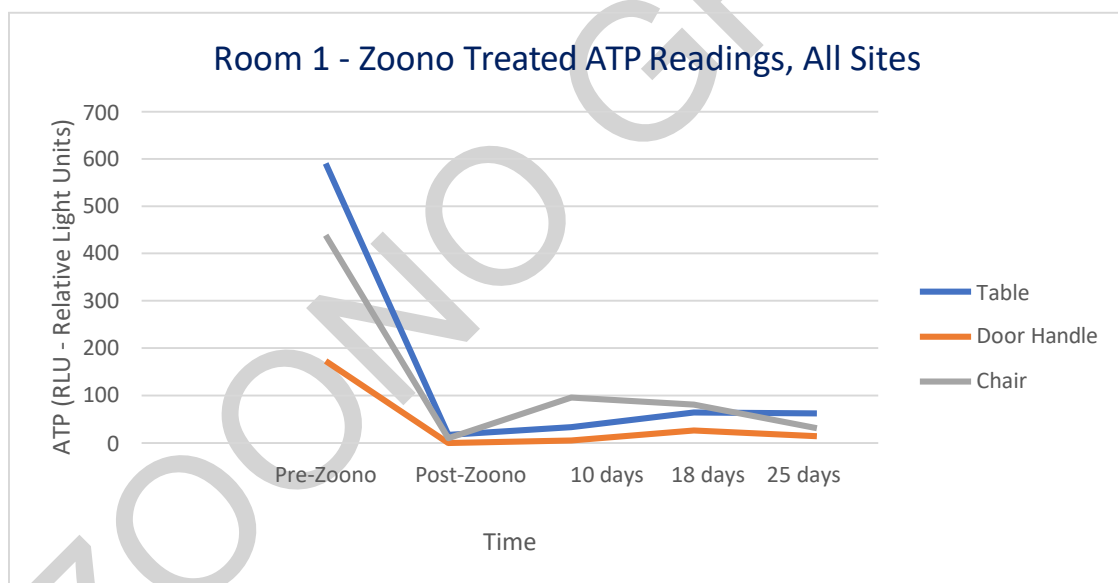
Testing

The purpose of this trial was to assess the performance of Zoono Z-71 Surface Sanitiser within an Education Facility. It is widely accepted that germs spread quickly amongst children, and having numerous children mixing daily within the same site make it even easier for bugs to spread. A trial was conducted at a South Island School in New Zealand between 10th August – 4th September 2019. There were no alterations made to the existing housekeeping protocols during the trial period. Therefore, the difference between the Control room (2) and the Zoono treated room (1) can be attributed to the addition of Zoono Z-71 Microbeshield and the additional layer of defense it provides.

In Room 1, Zoono product was applied topically to the identified surfaces within the school and routine cleaning regime was continued after Zoono was thoroughly left to dry. In Room 2, no Zoono was applied as this was the control room. In the control area the normal cleaning regime & protocol was continued.

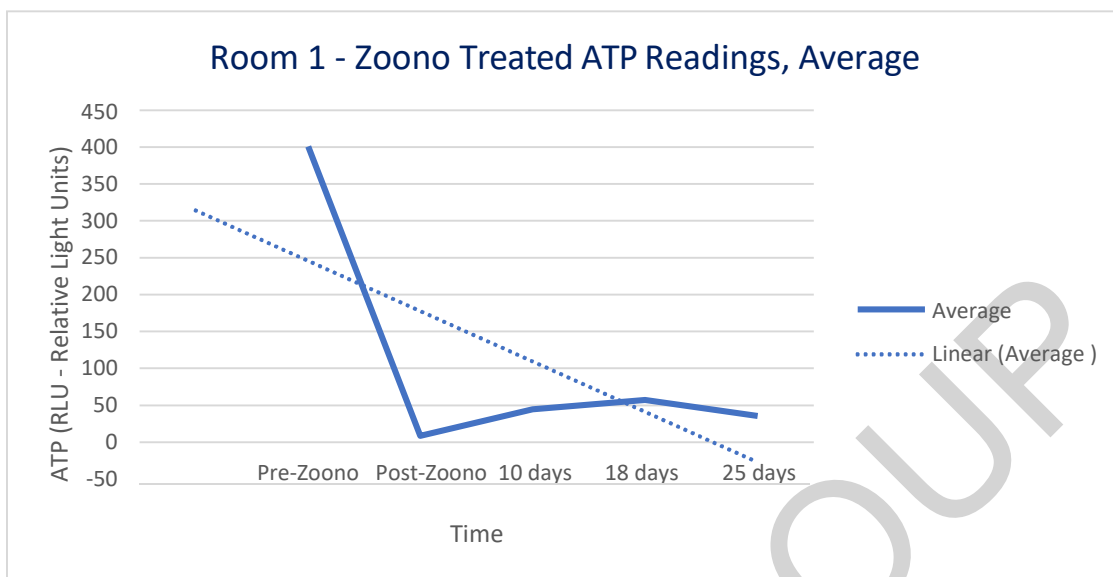
Results

Graph 1: Room 1 – Zoono Treated, All Sites



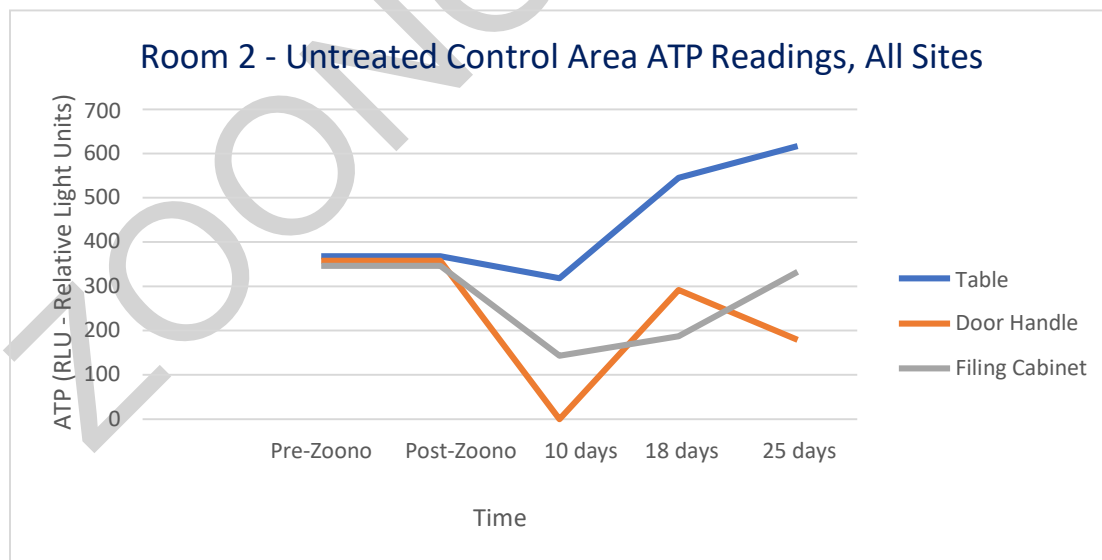
Graph 1 shows the reduction of bio-load over 3 different surfaces. A substantial initial decline can be seen, which then remains low over the duration of the testing. At the end of the trial period, all ATP results shown are <100, which is recognised as clean within the healthcare and food industries.

Graph 2: Room 1 – Zoono Treated, Average



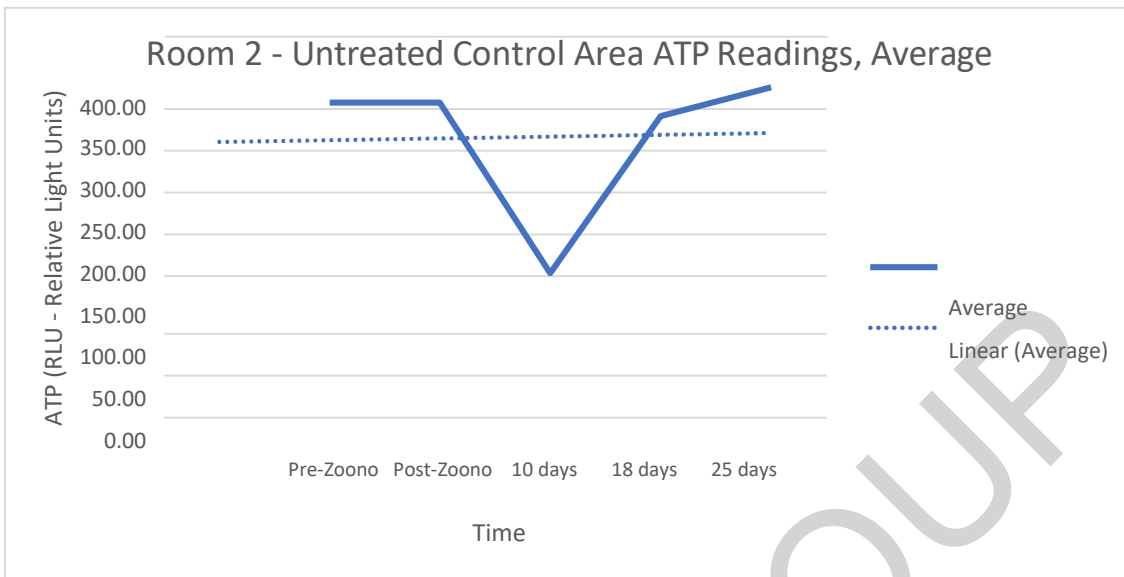
On average, a 91.1% reduction can be seen from the baseline results (taken prior to the application of Zoono) to 25-day post application. Immediately post application of Zoono (Post-Zoono – taken 1 hour after the application of Zoono had thoroughly dried) a reduction of 97.8% can be seen. The average ATP readings at 25 days post-Zoono application can be seen on the Graph as <50. As under 100 is considered clean and <30 considered food safe, this shows the excellent low-level of bio-load achieved across all surfaces.

Graph 3: Room 2 – Untreated Control Area, All Sites



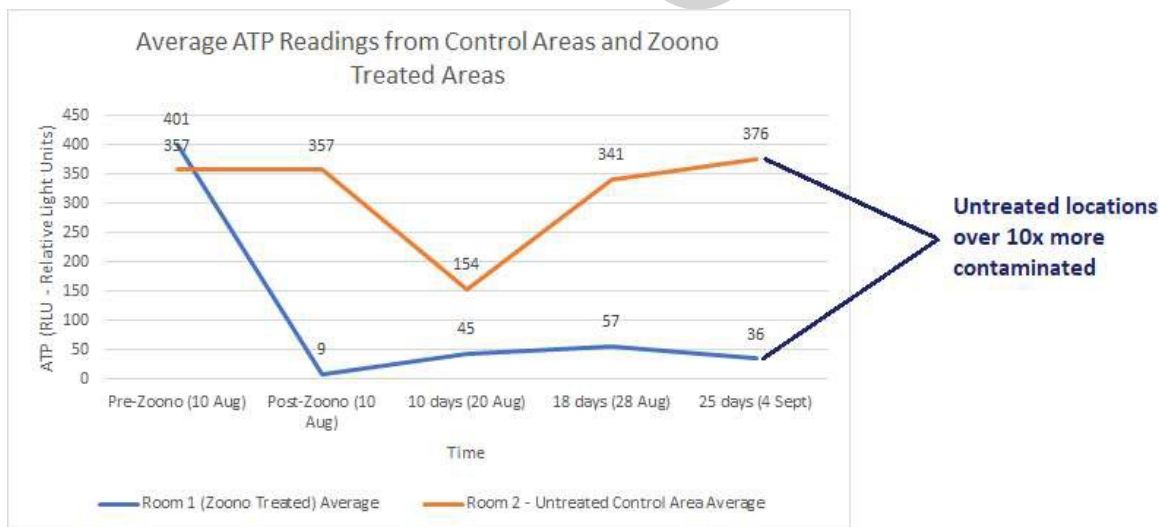
As can be seen from Graph 3, there is continual variance between results at all locations, depicting the uneven and higher levels of contamination that is found within the routine cleaning regime. Most results fall between the 100-500 range which can be considered as a caution needed /contaminated area.

Graph 4: Room 2 – Untreated Control Area, Average



Graph 4 shows the sporadic ATP results that were achieved within the routine cleaning regime. This highlights the unreliability of routine cleaning measures that are put in place and the variable bio-load that is achieved despite regular cleaning.

Graph 5: Comparison between average ATP Readings taken in the Control Areas and the Zoono Treated Areas.



Graph 5 shows that at 25 days, the average of ATP readings from the Control areas was 376 RLU and the average of ATP readings from the Zoono treated areas was 36 RLU. This shows that at 25 days post application of Zoono, the Control Area was greater than 10 times more contaminated than the Zoono treated area.

Observations

- An initial bio-load reduction of 97.8% was seen following the application of Zoono
- At 25 days post-application, a reduction of 91.1% can be seen when compared with the initial readings taken
- At 25 days post-application the Control area was greater than 10 times more contaminated than the Zoono treated area

Conclusions

In order to further safeguard children, teachers and other educators including parents, the addition of Zoono Z-71 surface sanitiser to the cleaning regime would be of great benefit in reducing the bio-load found within Educational Environments. Given the nature of the schools and the high throughput of bodies in different areas and rooms and the huge potential for cross contamination between children of all years, this additional layer of antibacterial protection can help halt the spread of germs and illness. This, in turn, can lead to increased productivity of both staff and pupils as a result of facing less downtime due to illness, reducing the need for parents and caregivers to take time off to attend their sick child.

It would be of additional benefit to consider the application of Zoono Hand Sanitiser within the school environment for both pupils, staff and others entering the facility as an added measure against the spread of germs. It is well documented that hands play a vital role in the spread of germs, and minimising this would bring huge benefits. Hand Sanitiser should be used in conjunction with good hand hygiene to remove visible particles of dirt from the surface of the hands. Zoono remains active even after general hand washing.

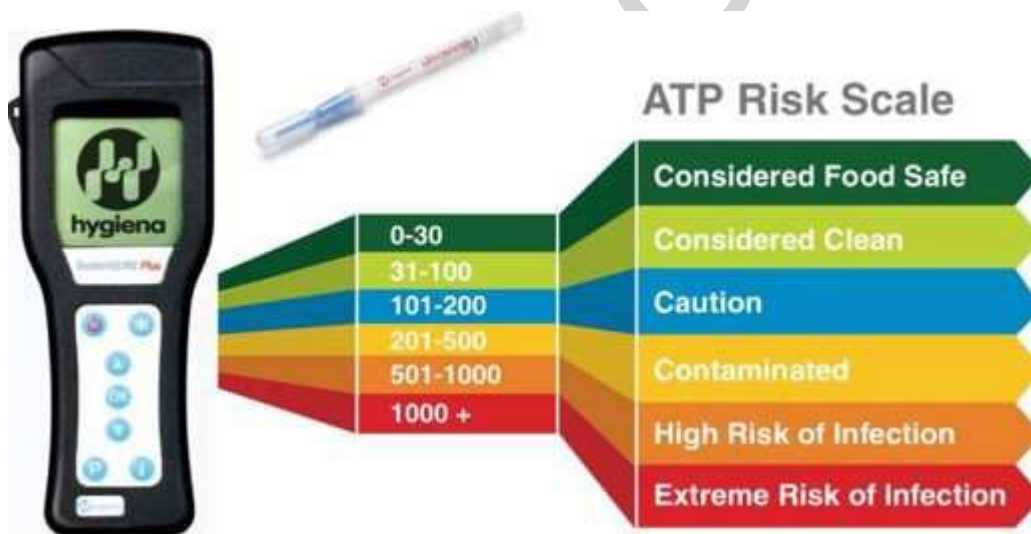
Appendix 1

Raw Data

Room 1 (Zoono Treated)	Pre-Zoono (10 Aug)	Post-Zoono (10 Aug)	10 days (20 Aug)	18 days (28 Aug)	25 days (4 Sept)
Table	591	17	33	64	62
Door Handle	173	0	5	26	14
Chair	439	10	96	81	31
Average	401	9	44.66	57	35.66

Room 2 - Untreated Control Area	Pre-Zoono (10 Aug)	Post-Zoono (10 Aug)	10 days (20 Aug)	18 days (28 Aug)	25 days (4 Sept)
Table	368	368	318	545	617
Door Handle	358	358	0	292	179
Filing Cabinet	346	346	143	187	332
Average	357.33	357.33	153.67	341.33	376.00

ATP Risk Scale



ATP testing was used to decipher the surface contamination levels. ATP is a commonly accepted method of testing surface contamination in many industries including Food Production & Healthcare. ATP detects the presence of Adenosine Triphosphate which is a molecule present in all living organisms in the measure of 'Relative Light Units'. It is used widely and accepted as an estimation of surface contamination and is the only point-of-testing result that can be easily achieved & compared between industries in real time.