



DB ECOsystems

COST EFFECTIVE ENVIRONMENTAL SOLUTIONS

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**Fogging trial conducted in a Nursing Home – comparison of the
General respiratory irritation of AEROS, Herlisil & Hysan (chlorine
dioxide) plus antimicrobial efficacy of AEROS**
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BACKGROUND TO TRIAL

Several rooms were used in the nursing home for this trial.

During a previous nursing home trial, DB ECOsystems encountered problems with respiratory irritation caused by fogged Herlisil. This necessitated an investigation into whether fogging AEROS would cause similar problems, and whether it could provide similar success in reducing surface contamination.

METHOD

The following test conditions were used for the current trial:

General respiratory irritation:

- Three bedrooms with en-suite bathrooms were fogged for a short period of 30 seconds with one of the trialed products; Herlisil, AEROS, or Hysan to test qualitative respiratory results for the three chemicals. Filter masks were worn during fogging. General respiratory irritation 5 minutes post-fog was assessed by two DB ECOsystems personnel, the nursing home manager and an employee of the nursing home

Antimicrobial activity:

- The Laundry room was fogged for 30 seconds with AEROS and microbial results obtained. For the Laundry room test, cotton-tipped swabs moistened with sterile saline were used to sample microbial contamination of surfaces before and after fogging. Surfaces chosen were regarded as areas likely to come into direct skin contact frequently. Fogging was performed using a sweeping motion to target all areas of the room. Following fogging, surfaces were left for around 15 minutes to allow surfaces to dry; the rooms were then ventilated by opening a window.

RESULTS

General respiratory irritation:

All individuals agreed that the most unpleasant chemical was Herlisil – it produces a fog that is overpowering and makes breathing difficult. Chlorine dioxide produced a thick fog that persisted long after fogging, and this was also uncomfortable to inhale. The fog produced by AEROS did not make impair breathing and was not unpleasant to inhale. In terms of low respiratory irritation, the unanimous consensus was that AEROS was the best product.

Antimicrobial activity:

These figures represent total viable counts from swabbed agar plates. Also see photographs of agar plates under ‘Conclusions’ section.

Laundry room:

AEROS FOGGING

Sample area	No. colonies pre-fog	No. colonies post-fog	% kill
Rubber pipe	3	0	100
Washing machine top	108	30	72.2
Washing machine switch	85	16	81.2
Soap dispenser handpush	26	3	88.5
Laundry bin	Too many to count, estimate 2000	96	95.2

Total colony count prior to fogging = 2222. Total after fogging = 145.

Overall % reduction in surface microbial contamination = 93.5%.

CONCLUSIONS

In addition to causing the least respiratory irritation during and after fogging, AEROS was effective in reducing surface contamination. The time of fogging should be at least doubled for future applications.



Agar plates showing colonies observed pre and post-fogging with AEROS in laundry room. In each picture, colonies to the left of the dividing line were grown from swabs taken pre-fogging, those to the right from swabs taken post-fogging. Sample areas, clockwise from top left: laundry bin, washing machine switch, and soap dispenser handpush.