



FINAL REPORT

Efficacy of an Air Sanitizer

PROTOCOL
As per Clients Instructions

ORDER Number
371106146

PREPARED FOR:

Airfree Products
RUA Mouzinho Da Silveira
Lisboa, Portugal
PT





Certificate of Analysis

Client: Airfree Products

Contact: Daniel Matias

Project: Efficacy of an Air Sanitizer

Product : P2000

EMSL NO: 371106146

Sample received: 5/19/2011

Start date: 5/31/2011

Report date: 8/23/2011

Challenge Room: EMSL Building 108 Haddon Ave, Westmont, New Jersey, USA.

Experimental Summary: The testing procedure was designed after discussions between EMSL Analytical, the testing company, and the client, Airfree Products. The testing procedure is based on the clients request with the testing conducted in a mold and bacteria contaminated room for 8 weeks. The testing was conducted in our Cinnaminson Microbiology Laboratory.

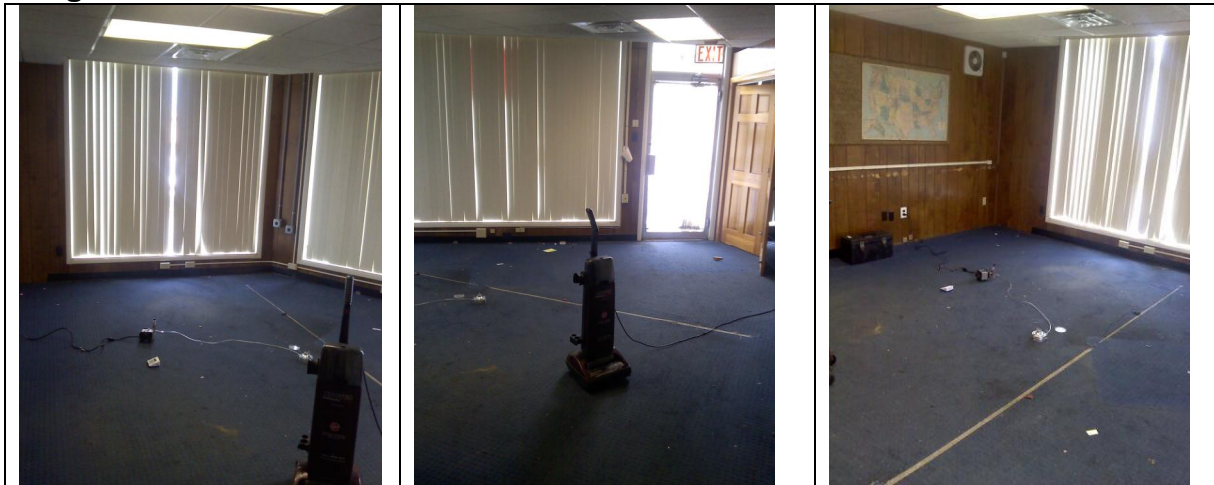
Procedure:

The room selected for testing was an office size 3.65m x 4.57m in one of our company's older buildings. The workers of this building recently moved into a new building and thus the room is currently vacant. As seen in the photos (Fig. 1.1) there are two big windows, a door to the outside and another larger entrance way into the room. The room is carpeted and there is an exhaust system on the ceiling. Samples were collected in triplicate twice a week at the same time for the first two weeks to determine baseline fungi and bacteria counts. An Anderson air sampler was utilized for air sampling and run for 4 minutes at 25 L/m. Bacteria were collected on Tryptic Soy Agar (TSA) and incubated at 30°C for 48 h, while fungi were collected on Malt Extract Agar (MEA) and then incubated at 25°C for 96 h. After two weeks the Airfree P2000 air sanitizer was turned on and allowed to run continually for 4 weeks. During this time samples were similarly collected in triplicate twice a week using the Anderson air sampler. Once the last sample was collected the air sanitizer was turned off and air samples were continued to be collected for 2 more weeks. Following incubation



of TSA and MEA plates all colonies were counted and recorded into a spreadsheet for further statistical calculations.

Fig. 1.1



Experimental Results:

Table 1.1 Initial and Final Counts of Fungi and the Correspondent Percent Reduction

Average Initial Counts (CFU/m ³)	Average Final Counts (CFU/m ³)	%Reduction
560	170	69.64%

Counts were the average of three collections from the initial and final days of operation of the Air Sanitizer

%Reduction is the percent difference from the average initial counts and the average final counts

Table 1.2 Initial and Final Counts of Bacteria and the Correspondent Percent Reduction

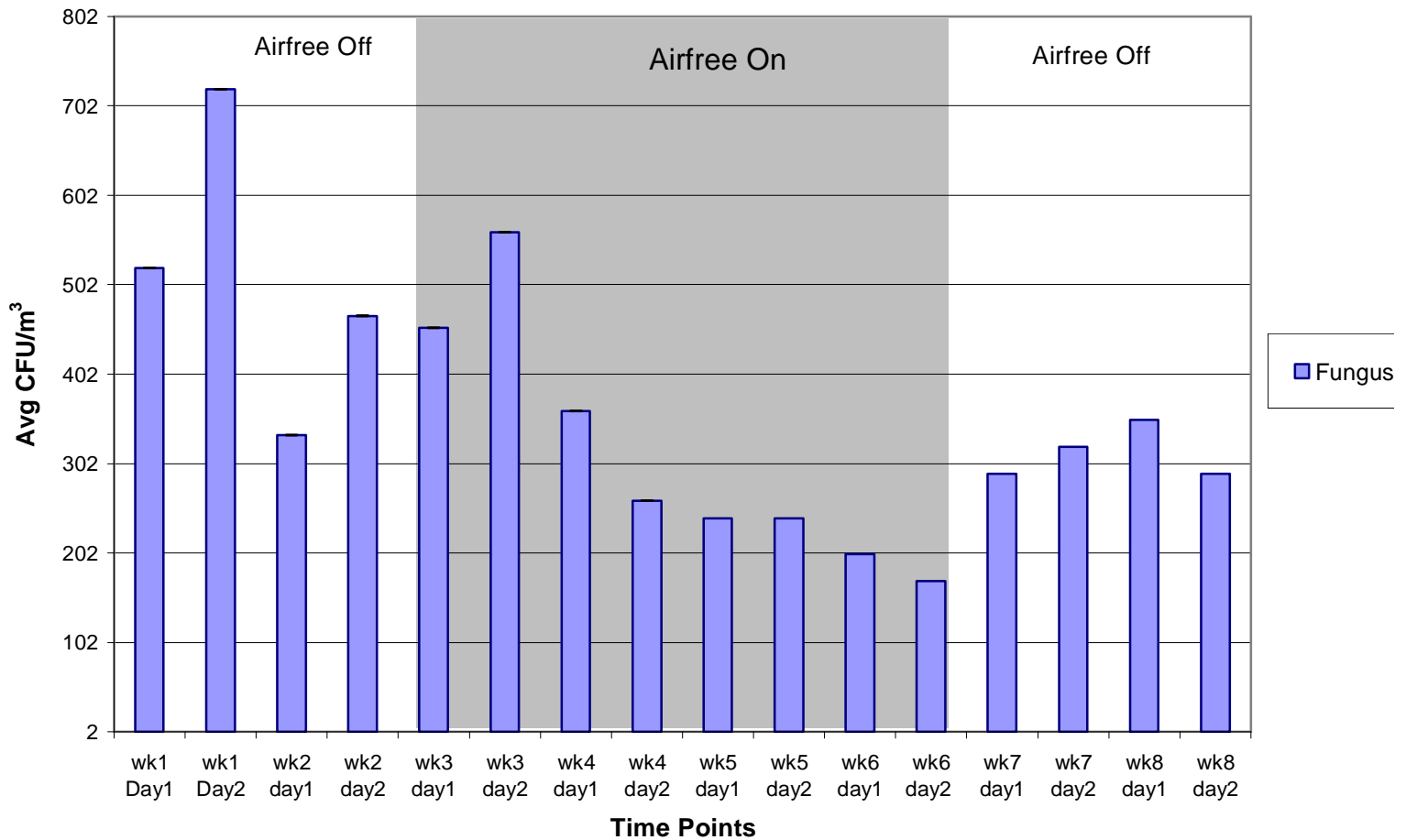
Average Initial Counts (CFU/m ³)	Average Final Counts (CFU/m ³)	%Reduction
533	80	85.0%



Counts were the average of three collections from the initial and final days of operation of the Air Sanitizer
%Reduction is the percent difference from the average initial counts and the average final counts

Fig. 1.1

Average CFU/m³ Counts for Fungi For Eight Week Testing of Airfree

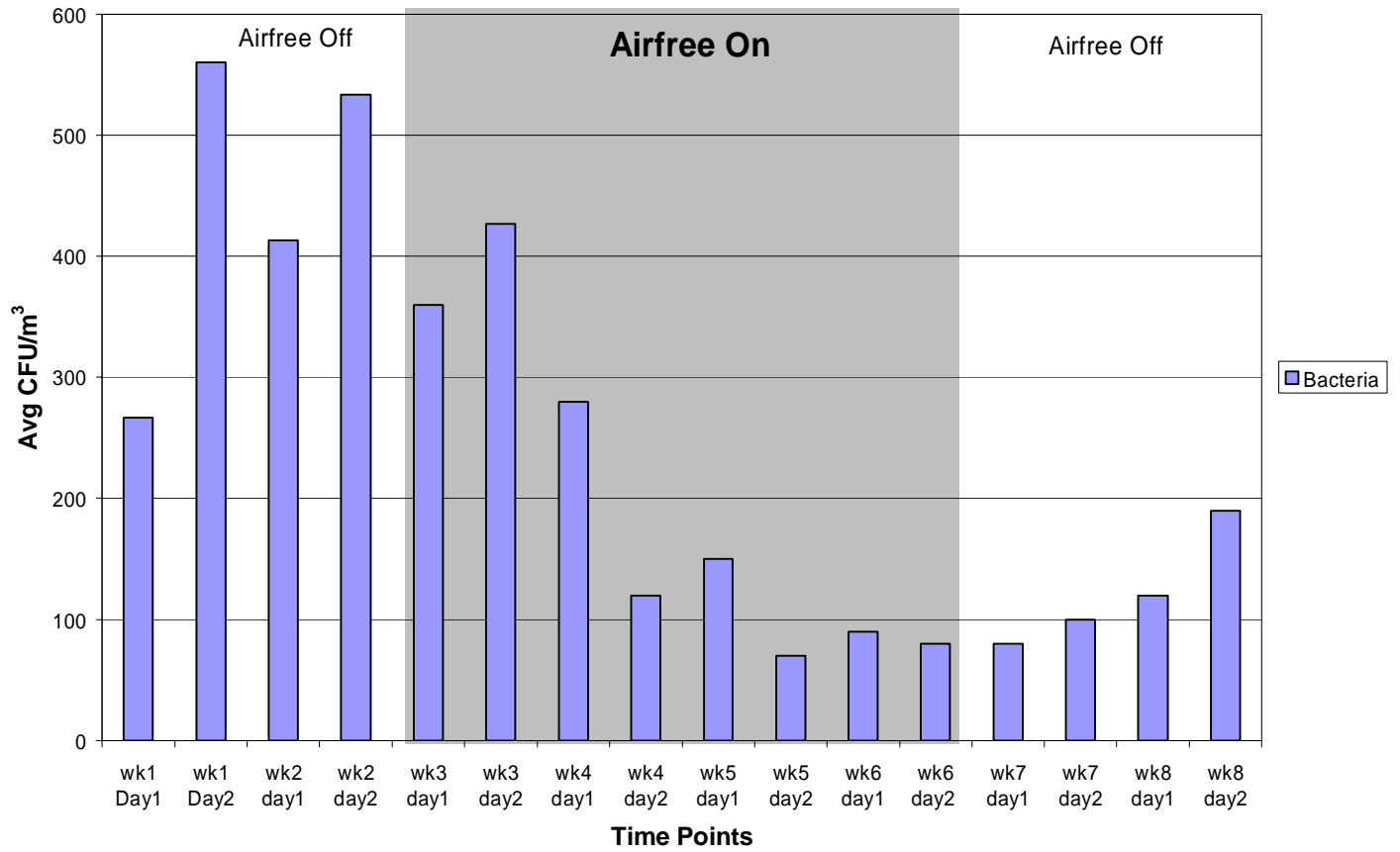


^a Each point is the average of three collections represented in CFU/m³



Fig. 1.2

Average CFU/m³ Counts for Bacteria For Eight Week Testing of Airfree



^a Each point is the average of three collections represented in CFU/m³



Conclusions/Observations:

The P2000 air sanitizer by Airfree Products was tested for its efficacy at disinfecting (killing) bacteria and fungi in an office room. It was observed that the starting bacteria counts were 533 CFU/m³ and fungi counts were 560 CFU/m³ when the air sanitizer was initially turned on (Table 1.1 and 1.2). Once the P2000 air sanitizer was turned on, as emphasized in Fig 1.1, a decrease in the density of fungi and bacteria were observed with an ultimate reduction coming in the final week. After 4 weeks the air sanitizer was turned off and the fungi and bacteria were observed to increase in density, hinting towards the efficacy of the air sanitizer.

In conclusion, the P2000 air sanitizer was observed to reduce bacteria by 85.0% and fungi by 69.64% for the four weeks it was turned on (Fig. 1.1 and 1.2).

Farbod Nekouei, M.S., Laboratory Manager
or Other Approved Signatory