

# R and D Enterprises

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June 13, 2006

Mr. Jack Barber  
Waterwise Inc.  
3608 Parkway Blvd.  
Leesburg, FL 34748-9399

Dear Mr. Barber:

Here is our report on the Phase 1 in-home evaluation of your Airwise air purifiers. We used the three purifiers received from you on May 4, 2006. The units were labeled LG (Large Room), MR (Multi Room), and SM (Small Room). Preliminary testing confirmed that the UV light tube ignited normally in all three units. During continued operation, the ambient room air level of ozone tested in the center of the rooms with an ECO sensor measured 0.01 PPM or less of ozone. The purifiers were installed and tested concurrently in separate rooms in a two-story residence comprising 2,645 square feet. The Multi Room (Room No. 1) comprised 1265 square feet. The medium bedroom (Room No. 2) comprised approximately 750 square feet. The small bedroom (Room No. 3) comprised approximately 350 square feet. A normal home environment was maintained throughout the study. Air samples were collected with a SAS Super 90 air sampler operated at 100 liters per minute, using standard microbiological technique for counting yeast and mold. Five individual 100 liter samples were collected in one minute each (500 L total) at each sampling interval. Bacteria were collected on Plate Count Agar (PCA) plates. Mold and yeast were collected on 90mm Petri dishes containing Potato Dextrose Agar (PDA) yeast and mold count agar. The PCA plates were incubated for two days at 35° C. PDA plates were incubated five days at 26°C. All plates were counted manually.

Consistent reduction of airborne bacteria and mold was produced by all of the Airwise purifiers tested in this in-home study. This was typically about 75% to 90% reduction of bacteria and molds, comparing the six-day treatment with the untreated in-home baseline values. Normal home activities were maintained throughout the test period. Household consisted of two adults and two indoor dogs.

Our detailed results including data, graphs, and photographs illustrating an Airwise purifier installed in the test home and the SAS Super 90 Air Sampler used in this study are attached in Appendix 1.

Thank you very much for the opportunity to work with you on this interesting project.

Sincerely,

Dee Graham, President

# APPENDIX 1

## DETAILED REPORT on Airwise Test No. 1

### Baseline Period

Airborne bacteria and mold were determined daily during three-day baseline periods as follows:

- Ambient air outside the home
- Ambient air in a 1265 square foot family room (Room No. 1)
- Ambient air in a medium 750 square foot bedroom (Room No. 2)
- Ambient air in a small 350 square foot bedroom (Room No. 3)

The Airwise purifiers were installed but not operating during the baseline periods. Five replicate samples were collected from each location every evening.

### Test Period

Five 100-liter replicate air samples for bacteria and five air samples for mold were taken daily of ambient air outside the home and from each room during the three-day base periods. Immediately after the three-day base periods, the Airwise purifiers were started and operated continuously in the test rooms for six days. Test samples were collected each evening for six days. On the six test days, five replicate 100-liter samples were taken from each room for bacteria and five for mold. All results were calculated and compiled as colony forming units (cfu) per 100 liters of room air.

This plan provided 30 outside air samples (15 for bacteria and 15 for mold) for baseline of outside air. The inside air base periods comprised 90 air samples (five bacteria and five mold daily in three rooms for three days). The test periods comprised 180 inside baseline samples (five samples daily for bacteria and five for mold for each of three test rooms for six days). Total bacteria were determined on PCA plates; mold counts were determined on PDA plates; results were tabulated and analyzed statistically for comparison with baseline and to track sequential changes of airborne mold counts over time. Ozone levels in ambient air were monitored with an ECO sensor sensitive to ozone levels of 0.01 PPM or higher. All ozone levels were 0.01 PPM or less in the test rooms.

CMC, Inc. (California Microbiological Consulting, Inc.) conducted the in-home sampling and determined bacteria and mold counts in our Walnut Creek Research laboratories.

### Discussion of Results

Consistent reduction of airborne bacteria and mold was produced by all of the Airwise purifiers tested. This was typically about 75% to 90% reduction of bacteria and molds, comparing the six-day treatment with the untreated in-home base line values. Normal home activities were maintained throughout the test period.

## Detailed Results

### Atmospheric conditions during the test period

Test Day No.	Ambient Temperature °F	RH %	Barometric Pressure inches	Weather	Wind Direction and MPH
1	69	52	29.81	Rain	SW 11
2	67	51	29.90	P. Cloudy	WSW 9
3	76	48	30.14	P. Cloudy	NW 9
4	68	49	30.23	P Cloudy	WNW 8
5	71	42	30.04	P.Cloudy	W 12
6	63	43	29.94	P.Cloudy	NW 20 Gusty
7	63	43	29.84	P. Cloudy	NW Avg 5 Gusts to 20
8	65	36	30.07	Sunny	W Avg 3 Gusts to 20

Outside Baseline Counts of Total Air Borne Bacteria (PCA)  
And Yeast and Mold Counts (PDA)  
Ambient Air Outside of Home  
Baseline Replicate Samples

Day No.	CFU per 100 Liters of Air	
	Bacteria PCA	Mold PDA
1 <sup>a</sup>	>300	>300
2 <sup>a</sup>	>300	>300
3 <sup>a</sup>	>300	>300

<sup>a</sup> Five replicate 100-liter samples  
each collected in 1 minute

Table 1 Room No. 1 Air Inside Large Family Room

Total Bacteria (PCA) CFU per 100 Liters of Air							
Day 1 to 3 No Treatment Followed by							
Multi Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	120	124	113	131	130	124	7
2 <sup>a</sup>	100	141	116	127	122	121	15
3 <sup>a</sup>	97	106	124	133	127	117	15
4 <sup>a</sup>	41	26	22	24	30	29	8
5 <sup>a</sup>	47	33	44	51	19	39	13
6 <sup>a</sup>	18	17	12	16	26	18	5
7 <sup>a</sup>	29	31	18	15	21	23	7
8 <sup>a</sup>	23	18	40	31	20	26	9
9 <sup>a</sup>	18	27	48	30	46	34	13

<sup>a</sup> Five replicate 100-liter samples each collected in 1 minute

Table 2 Room No. 1 Air Inside Large Family Room

Yeast and Mold (PDA) CFU per 100 Liters of Air							
Days 1 to 3 No Treatment Followed by							
Multi Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	210	240	200	210	198	212	17
2 <sup>a</sup>	180	160	210	210	230	198	28
3 <sup>a</sup>	194	188	160	177	183	180	13
4 <sup>a</sup>	72	80	77	86	79	79	5
5 <sup>a</sup>	86	80	76	93	84	84	6
6 <sup>a</sup>	84	81	89	77	91	84	6
7 <sup>a</sup>	31	36	30	31	37	33	3
8 <sup>a</sup>	31	25	27	33	40	31	6
9 <sup>a</sup>	16	15	14	21	18	17	3

<sup>a</sup> Five replicate 100-liter samples each collected in 1 minute

Table 3 Room No. 2 Air Inside Medium Bedroom

Bacteria (PCA) CFU per 100 Liters of Air							
Days 1 to 3 No Treatment Followed by							
Large Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	60	84	53	51	56	61	13
2 <sup>a</sup>	74	86	66	59	57	68	12
3 <sup>a</sup>	73	88	88	51	64	73	16
4 <sup>a</sup>	41	26	22	27	24	28	8
5 <sup>a</sup>	30	39	50	46	40	41	8
6 <sup>a</sup>	37	55	62	41	40	47	11
7 <sup>a</sup>	46	49	58	50	48	50	5
8 <sup>a</sup>	23	13	18	24	20	20	4
9 <sup>a</sup>	33	27	23	31	20	27	5

<sup>a</sup> Five replicate samples of 100 liters each collected in 1 minute

Table 4 Room No. 2 Air Inside Medium Bedroom

Yeast and Mold (PDA) CFU per 100 Liters of Air							
Days 1 to 3 No Treatment Followed by							
Large Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	92	91	88	74	79	85	8
2 <sup>a</sup>	100	93	91	97	96	95	4
3 <sup>a</sup>	89	76	76	84	88	83	6
4 <sup>a</sup>	66	61	58	59	62	61	3
5 <sup>a</sup>	40	45	42	56	40	45	7
6 <sup>a</sup>	33	24	20	23	19	24	6
7 <sup>a</sup>	25	25	30	31	39	30	6
8 <sup>a</sup>	34	33	41	37	15	32	10
9 <sup>a</sup>	10	11	13	14	18	13	3

<sup>a</sup> Five replicate samples of 100 liters each collected in 1 minute

Table 5 Room No. 3 Air Inside Small Bedroom

Total Bacteria (PCA) CFU per 100 Liters of Air							
Days 1 to 3 No Treatment Followed by							
Small Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	44	26	41	30	37	36	8
2 <sup>a</sup>	53	51	49	44	50	49	3
3 <sup>a</sup>	50	37	39	55	53	47	8
4 <sup>a</sup>	11	44	19	26	30	26	12
5 <sup>a</sup>	20	13	16	16	20	17	3
6 <sup>a</sup>	20	14	23	10	11	16	6
7 <sup>a</sup>	6	6	22	7	10	10	7
8 <sup>a</sup>	3	6	1	7	4	4	2
9 <sup>a</sup>	13	4	13	9	4	9	5

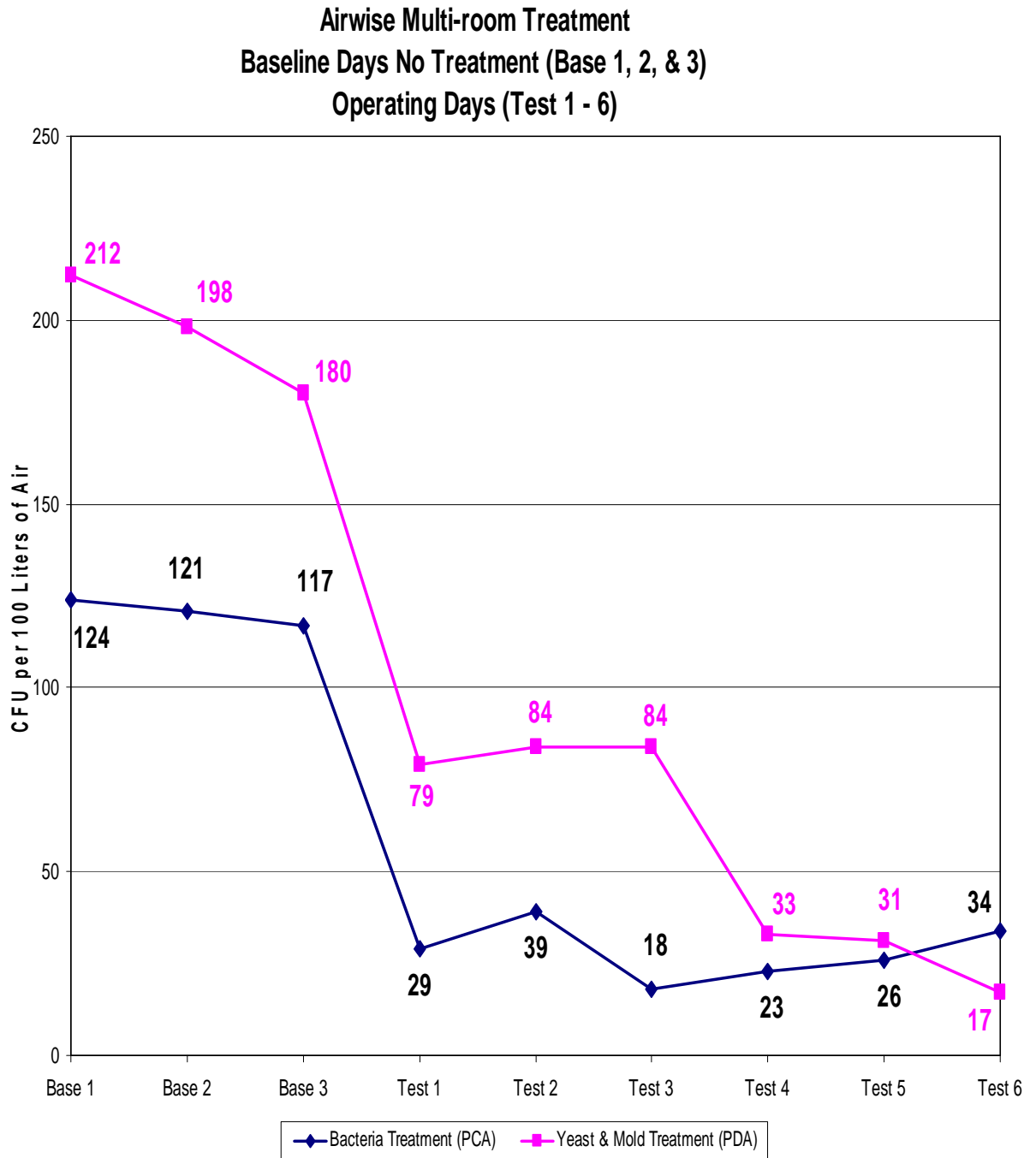
<sup>a</sup> Five replicate samples of 100 liters each collected in 1 minute

Table 6 Room No. 3 Air Inside Small Bedroom

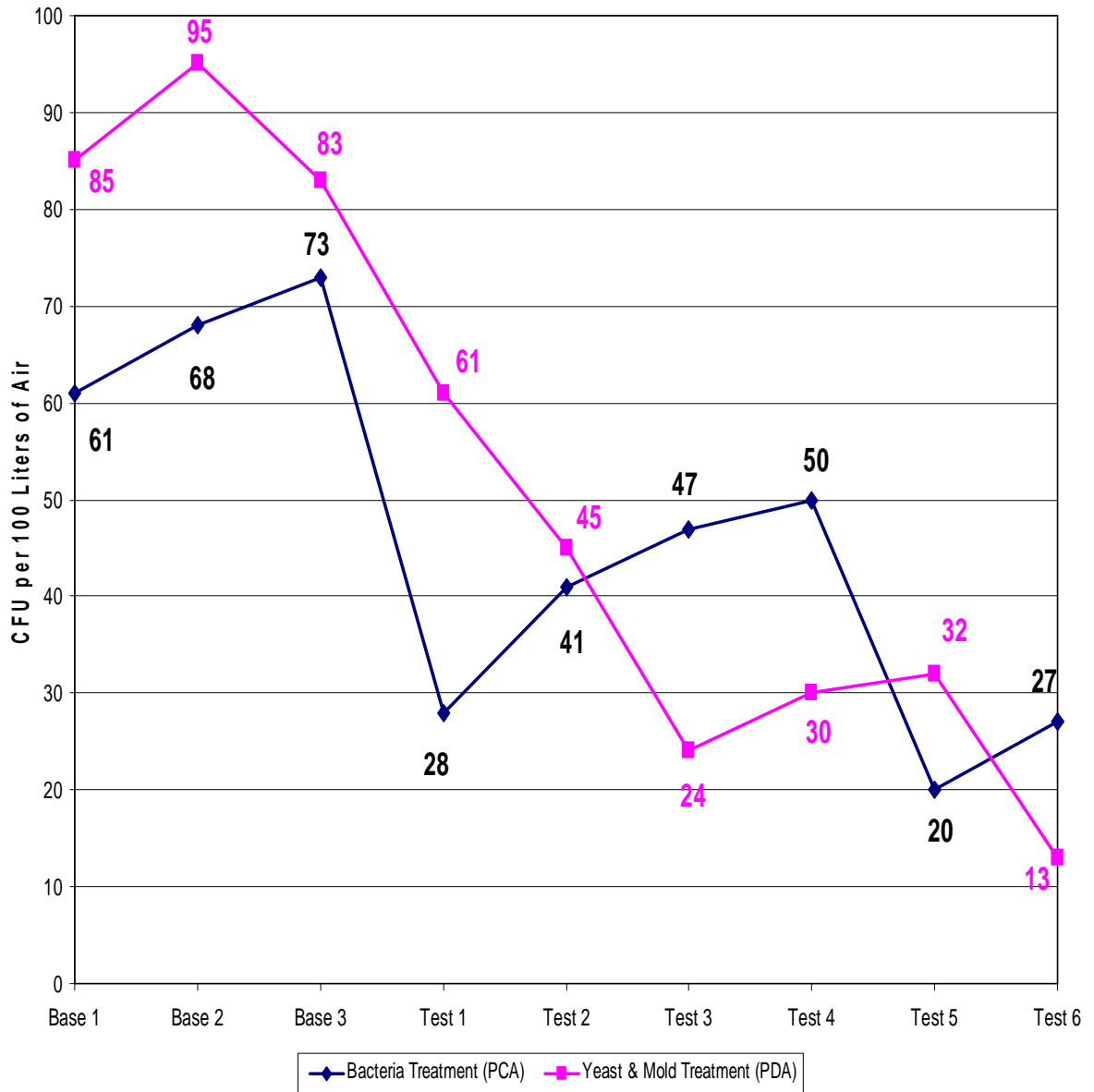
Yeast and Mold (PDA) CFU per 100 Liters of Air							
Days 1 to 3 No Treatment Followed by							
Small Room Airwise Treatment On Days 4 thru 9							
Day No.	A	B	C	D	E	AVG	DEV
1 <sup>a</sup>	47	51	59	40	46	49	7
2 <sup>a</sup>	50	33	46	49	49	45	7
3 <sup>a</sup>	61	40	47	44	49	48	8
4 <sup>a</sup>	47	51	59	40	46	49	7
5 <sup>a</sup>	15	19	7	9	13	13	5
6 <sup>a</sup>	7	9	11	19	21	13	6
7 <sup>a</sup>	5	5	3	4	1	4	3
8 <sup>a</sup>	16	4	3	6	6	7	9
9 <sup>a</sup>	4	7	2	6	5	5	13

<sup>a</sup> Five replicate samples of 100 liters each collected in 1 minute

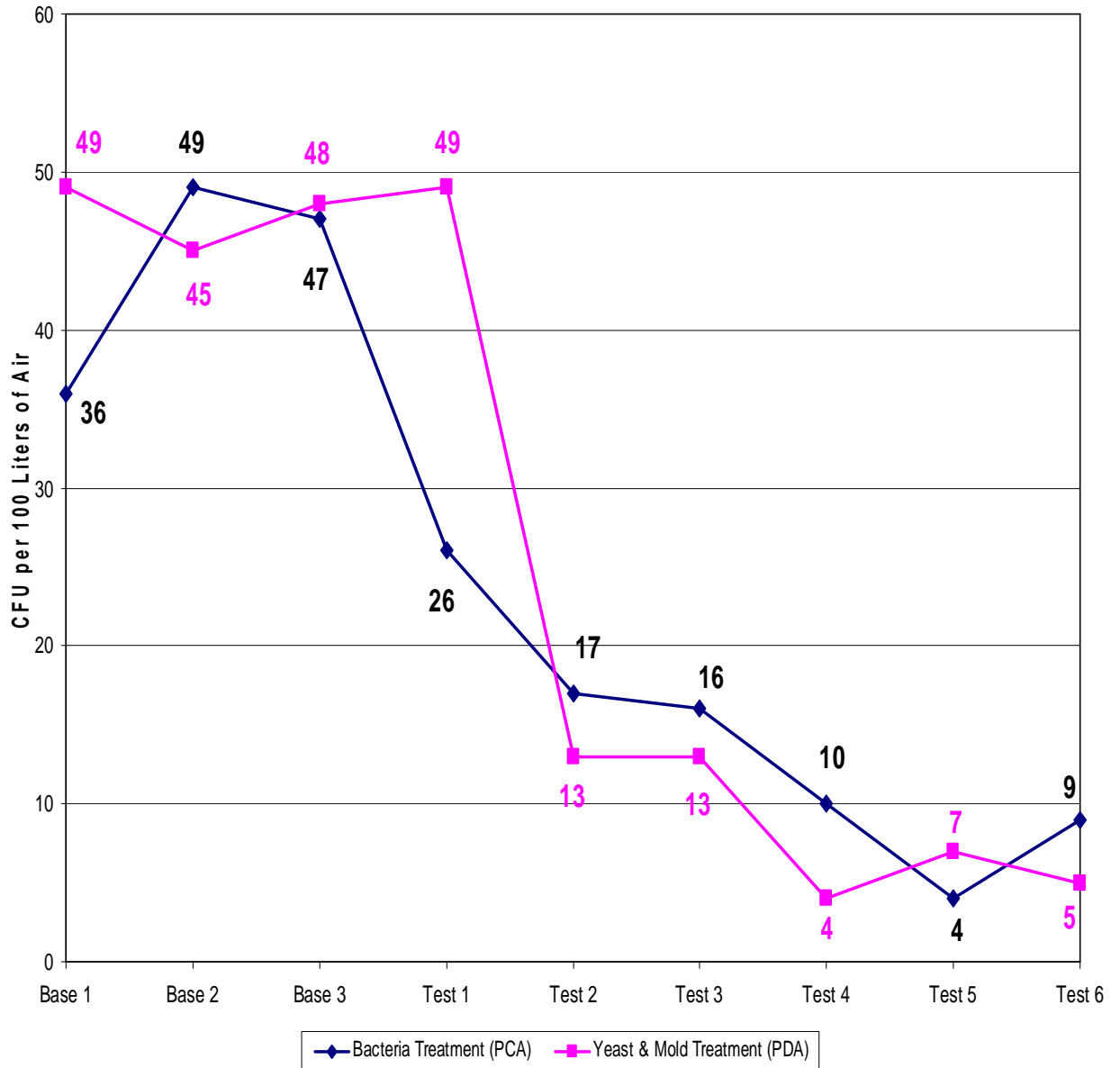
Graphical presentation of Airwise Test Data from Tables 1 through 6



**Airwise Large Room Treatment**  
**Baseline Days No Treatment (Base 1, 2, & 3)**  
**Operating Days (Test 1 - 6)**

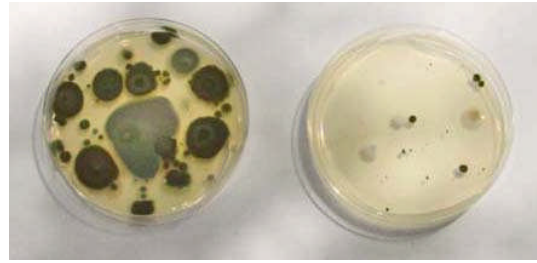


**Airwise Small Room Treatment**  
**Baseline Days No Treatment (Base 1, 2, & 3)**  
**Operating Days (Test 1 - 6)**





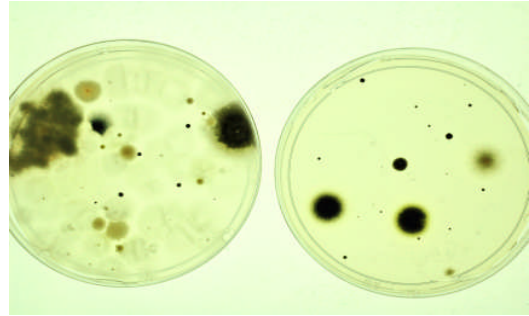
SASS Super 90 Air Sampler



Mold in Air of Room No. 1  
Left: No Treatment  
Right: Airwise Multi Room  
Treatment for 6 days



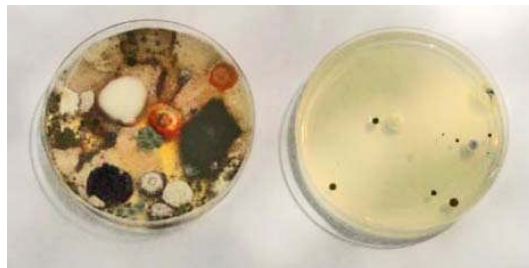
Airwise Multi Room unit operating in  
multiple room location 1265 square feet



Mold in Air of Room No. 2  
Left: No Treatment  
Right: Airwise Large Room  
Treatment after only 1 day



Mold in ambient air outside of test home  
at start of testing



Mold in Air of Room No. 3  
Left: No Treatment  
Right: Airwise Small Room Treatment  
for 6 days