

Academy of Military Medical Sciences
Institute of Microbiology and Epidemiology
No. 20, Dong Da Jie Road, Feng Tai District, Beijing, China

Device of Test: Biozone Air Purifier (Biozone, Model #500)

Date of Report: May 29, 2003

Date of Test: May 16 – May 29, 2003

Test Institute: Academy of Military Medical Sciences, Institute of Microbiology and Epidemiology

Address: No. 20, Dong Da Jie Road, Feng Tai District, Beijing, China

- I. Test Purpose:
 1. The efficacy of Biozone Scientific air purifier to clean or kill bacteria in contaminated air.
 2. The efficacy of Biozone Scientific air purifier to clean or kill bacteria on contaminated surface.

- II. Bacteria used in Test:
 1. Escherichia coli (8099)
 2. Serratia marcescens

- III. Methods:
 1. Test cleaning effectiveness for contaminated air by Biozone purifier:
 - a. Contaminate air artificially with above bacteria inside special sealed cabinets separately. Wait for certain period of time to allow bacteria spread evenly in air.
 - b. Collect air sample from outlet of the cabinet before the purifier operated.
 - c. Turn on the purifier and collect the air samples again with same procedure in different time periods and under different speeds of the purifier.
 - d. Examine the bacteria growth.

 2. Test cleaning effectiveness for contaminated surface by Biozone purifier:
 - a. Place certain numbers of bacteria culture plates of each bacteria strain in the seal air cabinet.
 - b. Turn on the purifier.
 - c. Move out the bacteria culture plates from the cabinet in different time periods and under different speeds of the purifier.
 - d. Examine the bacteria growth.

 3. Repeat test procedures three times for each experiment.

IV. Test Results: (The final results are based on average numbers from triplicate tests)

1. The cleaning effectiveness for contaminated air by Biozone purifier:
 - a. To clean contaminated air by *E. coli* (8099)

	0.5 min	5 min	10 min	30 min	60 min
Low Fan	44.59	94.20	100	100	100
Med Fan	83.69	97.46	100	100	100
High Fan	7.08	96.03	100	100	100

- b. To clean contaminated air by *Serratia marcescens*

	0.5 min	5 min	10 min	30 min	60 min
Low Fan	89.55	100	100	100	100
Med Fan	90.13	100	100	100	100
High Fan	10.99	67.16	100	100	100

2. The cleaning effectiveness for contaminated surface by Biozone purifier:
 - a. To clean contaminated surface by *E. coli* (8099)

	5 min	60 min	120 min
Low Fan	---	20.75	93.41
Med Fan	1.33	38.05	97.35
High Fan	25.29	58.22	97.49

- b. To clean contaminated surface by *Serratia marcescens*

	5 min	60 min	120 min
Low Fan	---	31.35	94.89
Med Fan	5.23	43.45	96.75
High Fan	27.93	67.82	98.39

V. Conclusion

Based on our test results, Biozone Scientific air purifier can effectively kill 100 % of *E. coli* and *Serratia marcescens* in air within 10 minutes, and can effectively clean 97.49% of *E. coli* and 98.39% of *Serratia marcescens* within 2 hours.

军事医学科学院微生物流行病学研究所

测试报告

检测对象：美国 BIOZONE “备至圣”牌劲秀强力光电净化器

委托检测单位：广州思特博机电设备有限公司

委托单位地址：广州市白云区新广花路夏茅四矿工业园区 17 号

检测单位地址：北京市丰台区东大街 20 号

检测类别：空气净化效果

检测日期：2003 年 5 月 16~29 日



一、检测项目

1. 对空气中微生物的净化效果
2. 对表面上的微生物净化效果

二、检测结果

空气生物学研究室多年的实践和经验，首先对气雾柜进行人工发生细菌气溶胶，经一定时间的稳定，采集空气本底样本后，再打开空气净化器进行空气净化实验，并在不同的时间采集净化器出气口的空气进行检测分析。另外，将涂有细菌的平皿置于气雾柜中，再打开空气净化器进行表面净化实验，在不同时间内取出平面检测，其结果如下。

1. 对空气中大肠杆菌 8099 的净化效果

作用时间 风速	0.5 分钟	5 分钟	10 分钟	30 分钟	60 分钟
低档风速	44.59	94.20	100	100	100
中档风速	83.69	97.46	100	100	100
高档风速	7.08	96.03	100	100	100

2. 对空气中灵杆菌的净化效果

作用时间 风速	0.5 分钟	5 分钟	10 分钟	30 分钟	60 分钟
低档风速	89.55	100	100	100	100
中档风速	90.13	100	100	100	100
高档风速	10.99	67.16	100	100	100

3. 对表面大肠杆菌 8099 的杀灭效果 (%)

风速 \ 作用时间	5 分钟	60 分钟	120 分钟
低档风速	—	20.75	93.41
中档风速	1.33	38.05	97.35
高档风速	25.29	58.22	97.19

4. 对表面灵杆菌的杀灭效果

风速 \ 作用时间	5 分钟	60 分钟	120 分钟
低档风速	—	31.35	94.89
中档风速	5.23	43.45	96.75
高档风速	27.93	67.82	98.39

上述每个测试实验均重复 3 次，所得结果为平均值。

三、检测结论

根据上述测试结果，“各至圣”牌空气净化器对空气中的大肠杆菌、灵杆菌 10 分钟的净化率可达到 100%，对物体表面上的大肠杆菌、灵杆菌 2 小时净化率分别达到 97.49% 和 98.39%。

