BioZone™ Tests in Hospital Environment

In May 2007 BioZone Scientific International Inc carried out institutional tests in a private hospital (Val d'Or surgery hospital in Saint Cloud) and a residential care home (EHPAD Du Bourg Joly in Saint Mathurin sur Loire) in France, EU. These tests were directed and conducted by a 3rd party research agency SARL AFR and the samples were analyzed by an independent laboratory Clean Concepts Measurements.

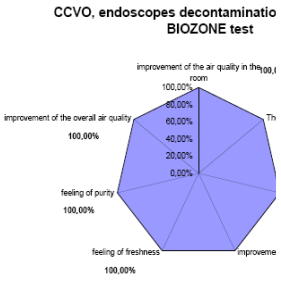
The tests were planned and conducted so, that the results would capture and describe both the perceived improvements in the room air quality, as well as quantify and verify the factual changes in the levels of airborne bacteria, mold and dust particles. The airborne microbe contamination was measured both before and after the installation of the BioZone unit. Also the room temperature and humidity was monitored throughout the test. The units were placed in chosen faclities including patient room, restroom, small surgery ward, endoscopy ward and operating theatre.

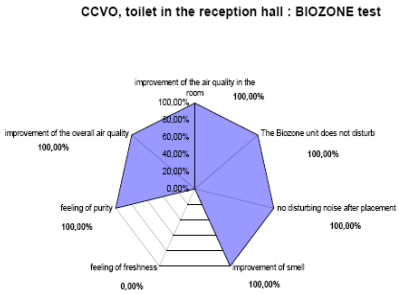
Test equipment used:
• *Portable airborne particle counter*: Met-One 3313 SN 030401025 – flow rate : 28,3 litres per minute - 6 particle size channels : ≥ 0,3 µm, ≥ 0,5 µm, ≥1,0 µm, ≥3,0 µm, ≥5,0 µm and ≥10,0 µm, sensitivity 0.3 µm,
• *Air sampler*: Sieve air sampler SAMPL'AIR MK2 n° 41671588 of AES Laboratoire with two sampling heads, n° 41671613d and 41671588d using 90 mm Petri dish.
• Airborne microbe incubation medium, temperature and time according to the table below

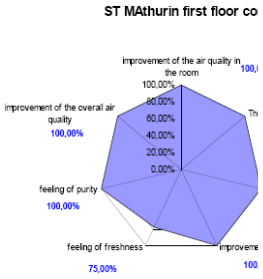
Sought flora	Culture medium	Temperature	Incubation time
Aerobic mesophiliac flora	Tryptic Soy Agar (TSA)	30 +/- 1°C	72 hours
Yeast and mold	Yeast Extract Glucose Chloramphenicol Agar	25 °C +/- 1°C	5 days

RESULTS OF THE OVERALL AIR QUALITY IMPROVEMENTS AND ODOR REDUCTION

The Biozone units were placed in cooperation with the technical staff of the hospital and of the care home. The first week was spent for users to get used to the presence and use of the units. On the second and the third week the qualitative interview audits were conducted to assess the perceived efficiency of the placed units. The interview results were presented using radar diagrams as displayed on the right. Summary of the results is listed below:







VAL D' OR SURGERY, PRIVATE HOSPITAL, ST. CLOUD

ENDOSCOPY WARD
Improvement of air quality: 100%
Feeling of purity: 100%
Feeling of freshness: 100%
Improvement of odor: 100%

SMALL SURGERY WARD
Improvement of air quality : 100%
Feeling of purity: 25%
Feeling of freshness: 100%
Improvement of odor: 100%

TOILET IN THE RECEPTION HALL
Improvement of air quality : 100%
Feeling of purity: 100%
Improvement of odor: 100%

INTENSIVE CARE UNIT
Improvement of air quality: 100%
Feeling of purity: 50%
Improvement of odor: 100%

THE RESIDENTIAL HOME

FIRST FLOOR CORRIDOR
Improvement of air quality: 100%
Feeling of purity: 100%
Feeling of freshness: 75%
Improvement of odor: 100%

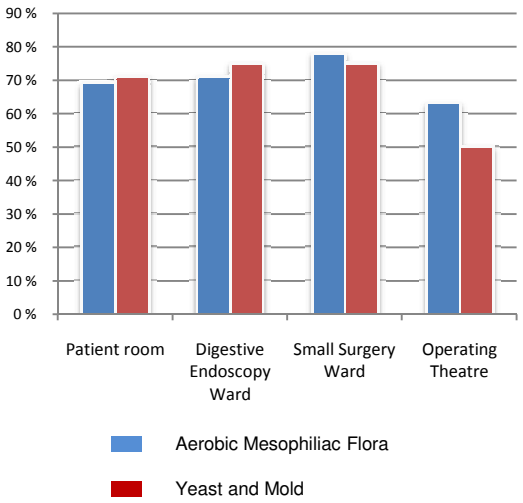
PATIENT'S ROOM
Improvement of air quality : 100%
Feeling of purity: 100%
Feeling of freshness: 100%
Improvement of odor: 100%

BioZone Scientific International Inc.
Linnoitustie 4 b, 02600 Espoo, Finland, T +358 (0)20 743 6620, F +358 (0)20 743 6639

BioZone™ Tests continued…

REDUCTION OF THE AIRBORNE MICROBES IN THE HOSPITAL

The test measured the reduction of the general airborne bacteria (aerobic mesophiliac flora), yeast and mold. In practice a standard amount of air was sucked through the air sampler to the soy agar and glucose plates. The plates were then placed into an incubator for 72 hours (bacteria) or 5 days (yeast), after which the results were calculated. In all tests BioZone units reduced dramatically the amount of airborne microbes.



INTENSIVE CARE UNIT PATIENT ROOM
Aerobic mesophiliac flora: *a reduction of over 69%*
Yeast and mold: *a reduction of over 71%*

DIGESTIVE ENDOSCOPY WARD
Aerobic mesophiliac flora: *a reduction of over 71%*
Yeast and Mold: *a reduction of 75%*

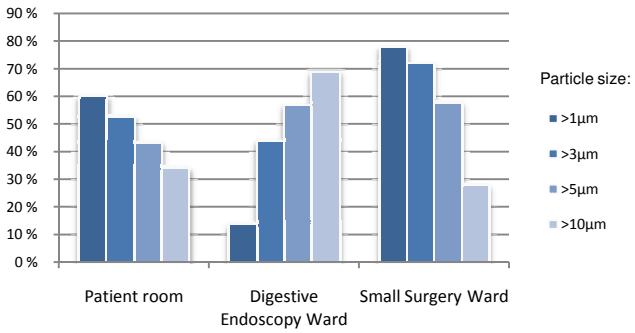
SMALL SURGERY WARD
Aerobic mesophiliac flora: *a reduction of 78%*
Yeast and Mold: *a reduction of 75%*

OPERATING THEATER SUITES
Aerobic mesophiliac flora: *a reduction of 63%*
Yeast and Mold: *a reduction of 50%*

REDUCTION OF THE AIRBORNE PARTICLES IN THE HOSPITAL

Due to the ionization technology of the BioZone units, the airborne particles become negatively charged. This electric charge attaches the particles to the positively charged walls and floors removing them from the room air. The particles can then be easily removed as part of the normal cleaning.

As the diagrams displays, the test results show a significant reduction of airborne particles in the measured size categories.



BIOZONE PRODUCTS USED IN THE TEST:

AirCare®
Bullet- proof solution for any restrooms' odor controlling
- Reliable, automatic purification 24/7
- Easy and fast installation

PowerZone®
Portable and efficient sanitizing tool
- Quick and complete deconta-mination even in the most challenging sites and facilities

BioZone®
Effective and silent general solution purifier for odor and microorganism control

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