



PDF File Provided by Natural Solutions Environmental, Inc. [www.naturalsolutions1.com](http://www.naturalsolutions1.com)

**Test at Banco Espirito Santo, Lisbon, Portugal**

**Fungi and Bacteria Testing**  
**Airfree efficiency in reducing indoor pollution**

Teste para fungos e bactérias  
Eficiência do Airfree na redução da poluição interna

**Test at one branch of Espirito Santo Bank**

**Performed by:**

INETI – National Institute of Engineering and Industrial Technology of the Ministry of Economy of Portugal

**Location:**  
Lisbon, Portugal

**Characteristics:**  
2 rooms below street level with central air conditioning, full of files and organic material

**Results:**

Room 1

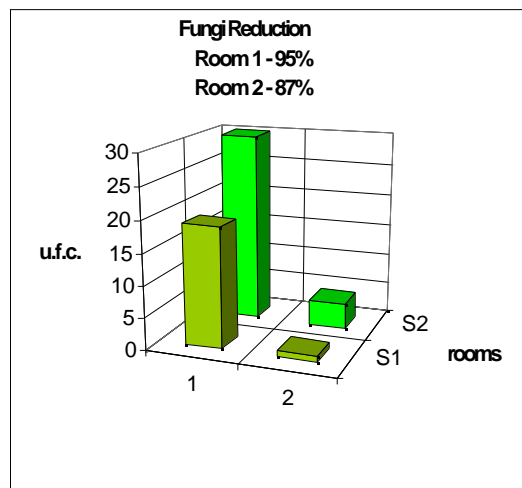
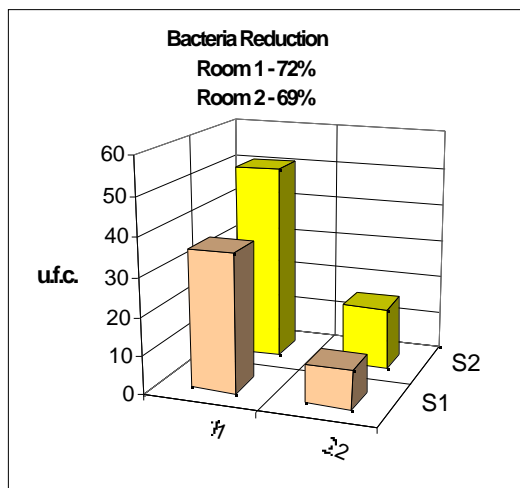
Bacteria - 72% reduction

Fungi - 95% reduction

Room 2

Bacteria - 69% reduction

Fungi - 87% reduction





↳ Pablo

Ministério da Economia  
**INSTITUTO NACIONAL DE ENGENHARIA E TECNOLOGIA INDUSTRIAL**  
INSTITUTO DE BIOTECNOLOGIA, QUÍMICA FINA E TECNOLOGIAS ALIMENTARES  
*Laboratório de Microbiologia Industrial*

Avenida dos Lameiros à Estrada do Paço do Lumiar 1699 LISBOA CODEX Telef: 716 51 41 Telex: 42 486 INETIP Fax: 716 09 01

### Test-Report

## **AIRFREE EFFICIENCY TEST IN REDUCING INDOOR MICROBIAL POLLUTION (FUNGI AND BACTERIA) AT "BANCO ESPIRITO SANTO" LISBON.**

### **AIM**

The aim of the present work was the assessment of the **AIRFREE RL60** efficiency in reducing airborne fungi and bacteria in 2 rooms at a Espirito Santo Bank branch in Lisbon characterized as being partially closed, before and after the use during 32 days of **AIRFREE RL60**.

### **METHODOLOGY**

#### Test conditions

In those 2 rooms located below street level, 5 units were installed. The first one at the meeting room with 25 m<sup>3</sup> and 4 units at the so called working office with 162.5 m<sup>3</sup>. The test was performed during 32 days. **AIRFREE RL60** units were installed on April 3<sup>rd</sup>. First set of samples obtained on March 31<sup>st</sup> and April 3<sup>rd</sup> prior to the installation of **AIRFREE RL60** devices, represent the average airborne microbial charge of both rooms. Petri dishes were exposed for 1 hour to the room ambiance



17 Pablo

Ministério da Economia  
**INSTITUTO NACIONAL DE ENGENHARIA E TECNOLOGIA INDUSTRIAL**  
INSTITUTO DE BIOTECNOLOGIA, QUÍMICA FINA E TECNOLOGIAS ALIMENTARES  
*Laboratório de Microbiologia Industrial*

Avenida dos Lanéis 4 Estrada do Paço do Lumiar 1699 LISBOA CODIX Telef: 716 51 41 Telex: 42 486 INET P Fax: 716 09 01

**Culture media used for airborne microbiologic count.**

**Fungi:** Malt Extract Agar (MEA) Difco  
**Bacteria:** Nutrient Agar (NA) Oxoid.

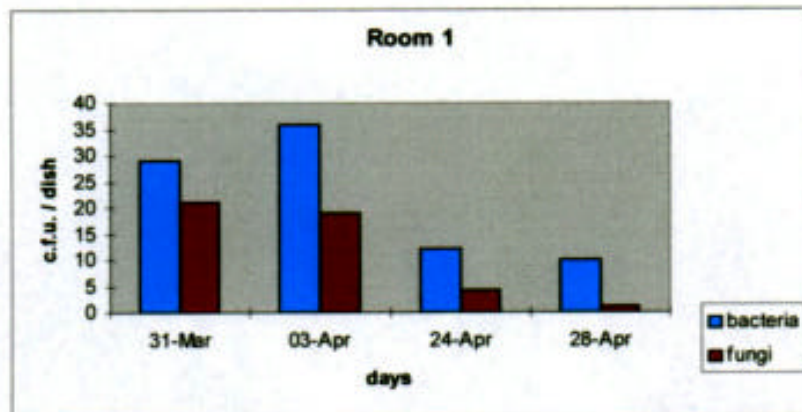
**Conditions of incubation:**

**Fungi:** 25°C 5 to 7 days  
**Bacteria:** 30°C 3 days

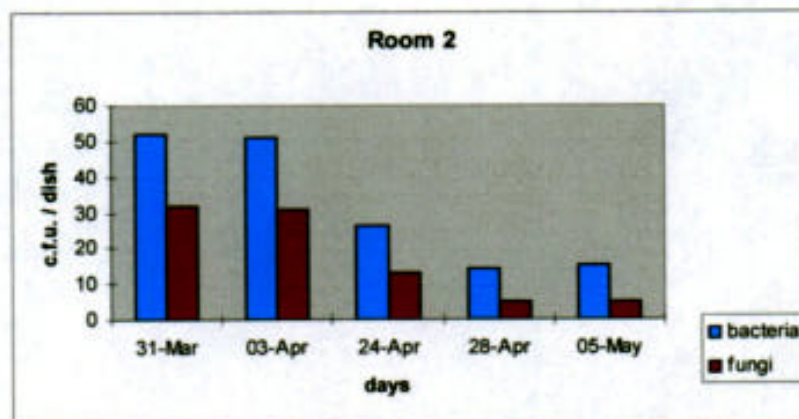
All results for fungi and bacteria were expressed in c.f.u (colony forming units) per dish. Each result represents the arithmetic average obtained in 5 different dishes with same means of culture within the same period.

**RESULTS**

Results for fungi and bacteria for both rooms are shown in the charts of the **Figures 1 and 2.**



**FIGURE 1.** – Airfree effect in reducing airborne microbial contamination in the meeting room. Units plugged in on April 3<sup>rd</sup>. Each point represents 5 reading average both for fungi and bacteria.



**FIGURE 2.** – Airfree effect in the larger room. Units plugged in on April 3<sup>rd</sup>. Each point represents 5 reading average both for fungi and bacteria.