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Ministério da Economia
INSTITUTO NACIONAL DE ENGENHARIA E TECNOLOGIA INDUSTRIAL
Laboratório de Microbiologia Industrial
Azinhaga dos Lameiros à Estrada do Paço do Lumiar 1649-038 LISBOA Telef: 21 716 51 41 Fax: 21 716 09 01

REPORT

EFFICIENCY OF AIRFREE AIR STERILIZER MANUFACTURED IN EUROPE UNDER LICENSE OF U.S. PATENT 5,874,050 IN REDUCING THE MICROBIAL LEVEL IN THE INDOOR AIR IN ROOMS OF A 4 STAR HOTEL IN LISBON.

OBJECTIVES

The study main objective was to verify the air sterilizer device efficiency in reducing the airborne fungi and bacteria levels in closed environments. This study was aimed to evaluate the microbial level in the air of bed rooms in a 4 star hotel during the duration of the test (43 days) while the Airfree air sterilizer manufactured under U.S. Patent 5,874,050 was functioning.

METHODOLOGY

Characteristics of test conditions

Three rooms were used for the test in said hotel. In rooms 216 and 217, one air sterilizer was placed in each room. In a third room (215) no air sterilizer was places and this room was considered as the control room. The devices were plugged in on March 19th, 2001 and samples were taken in April 20, 23, 27 and 30. An air sampler (Merck MAS-100) was used in each sampling, 2 collection points per room. 100 liters of air were picked up per sample.

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The airborne microorganisms count was made on 9 cm diameter Petri dishes.

Culture means used in the room air microbial count

Fungi: Malt extract Agar (MEA) Difco
Bacteria: Trypone Soya Agar (TSA) Oxoid

Incubation Conditions:

Fungi: 25° C during 7 days
Bacteria: 30° C during 3 days

Both for bacteria and fungi, results were expressed in microorganism total count per 1 cubic meter of air. Each number represents the arithmetic average of 2 sample points per room.

RESULTS

Result for both for fungi and bacteria in rooms 217, 216 and 215 are shown in charts 1, 2 and 3 respectively.

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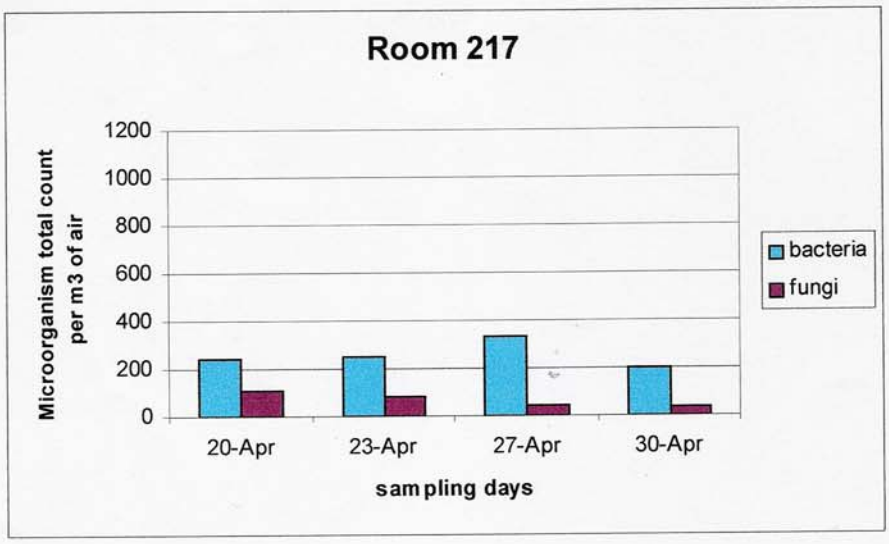

FIGURE 1. - Effect of Airfree Air Sterilizer in maintaining the microbial level in the air (bacteria and fungi) of Room 217. Each point represents the average of 2 sample counts.

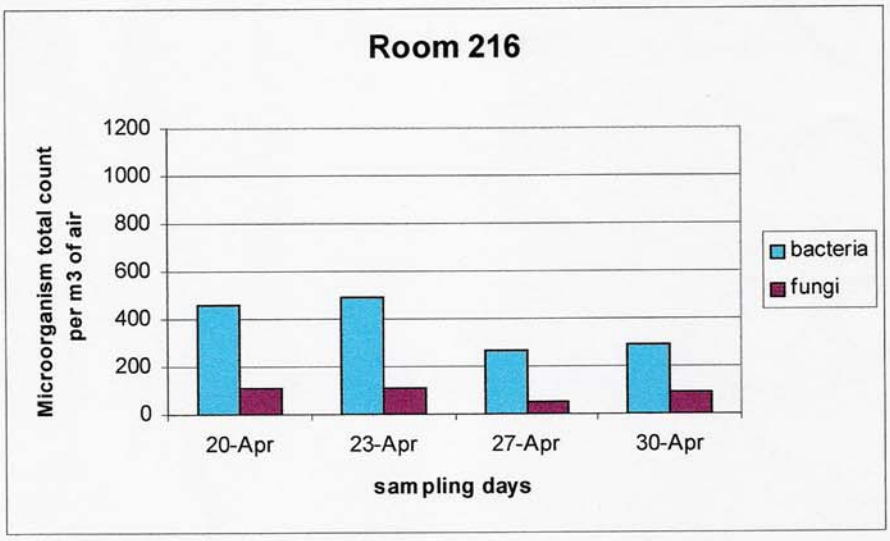

FIGURE 2. - Effect of Airfree Air Sterilizer (wall mount unit) in maintaining the microbial level in the air (bacteria and fungi) of Room 216. Each point represents the average of 2 sample counts.

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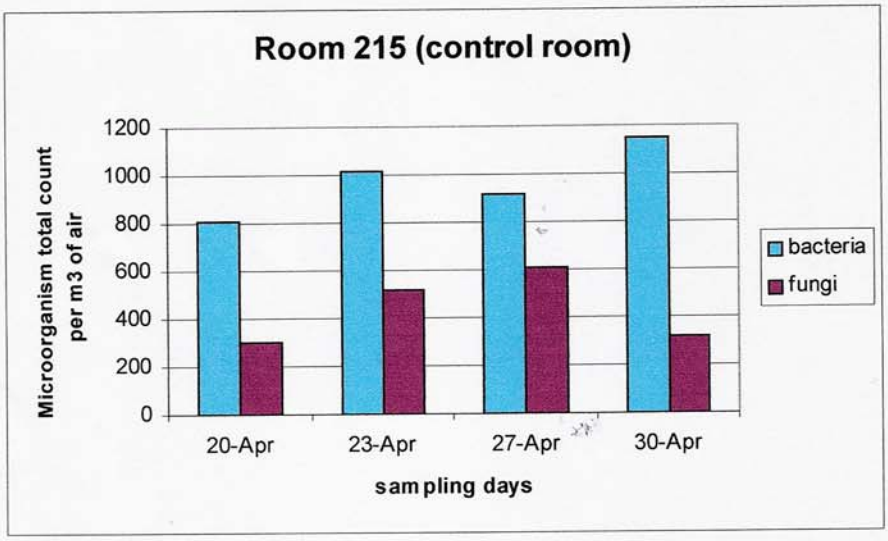

FIGURE 3. Microbial level of the air (bacteria and fungi) of the air in Room 215, the control room where no air sterilizer was placed. Each point represents the average of 2 sample counts.

For a better results comparison, more two charts were carried out. The chart of the **figure 4** represents the data of bacterial charge in the three rooms. The **figure 5** represents the same but for fungal charge.

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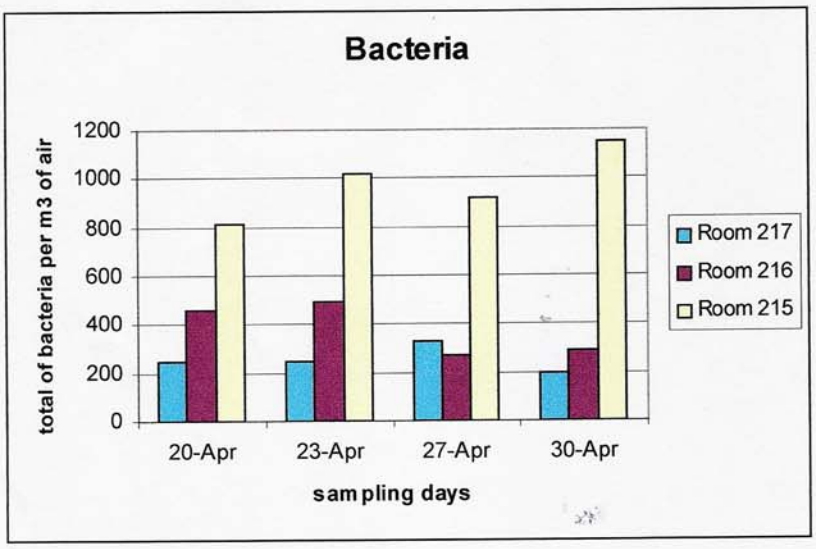

FIGURE 4. - Bacteria level in the air in rooms 217, 216 with Airfree air sterilizer and in the control room 215 without the air sterilizer. Each point represents the average of 2 sample counts.

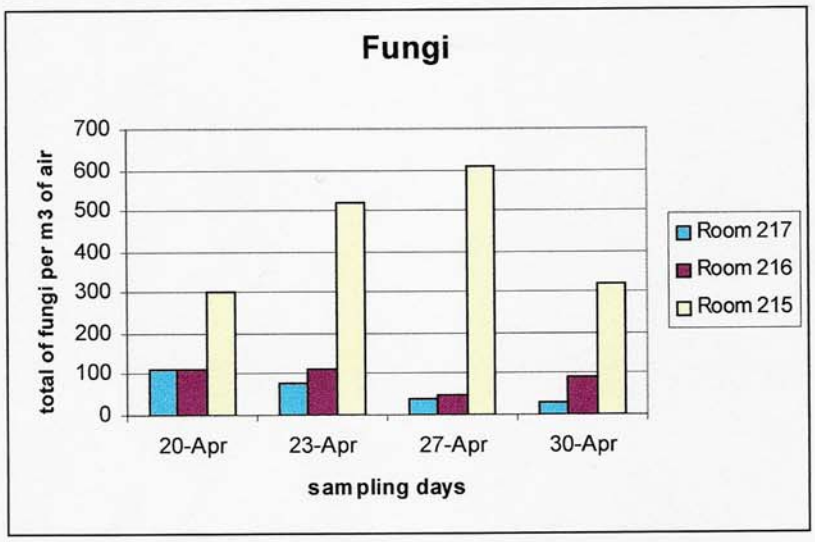

FIGURE 5. - Fungi level in the air of rooms 217, 216 with Airfree air sterilizer and in the control room 215 without the air sterilizer. Each point represents the average of 2 sample counts.

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Observing figures 1, 2, 3, 4 and 5 it can be verified that Airfree air sterilizer maintains lower levels of bacteria and fungi in the air in tested rooms. The air microbial levels outside the building were 200 c.f.u. for bacteria and 30 c.f.u. for fungi.

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Responsible for the Micology Sector

Pablo Tavares Pereira

The Director of LMI

José Carlos Roseiro