

DC 9

Denise D'Elia

FIBHGM, Madrid, Spain

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Supervisors: Prof Patricia Munoz and Prof Emilio Bouza

Background



! Delayed results



! Limited availability of resources



! Increased costs



Objective



 To investigate the **correlation** between **PM** and **fungal contamination** to develop a **rapid** monitoring method

Methods



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Methods



Locations

- ✓ Patient's room (unprotected)
 - ✓ Adjacent corridor
 - ✓ Nearby outside area

Building Categories

- 🏠 Old (Age: > 20 years)
- 🏠 Recent (Age: 6 – 20 years)
- 🏠 New (Age: < 5 years)

Time slots

- 🕒 **Morning:** 10:00 am – 12:00 pm
- 🕒 **Afternoon:** 4:00 – 6:00 pm
- 🕒 **Night:** 8:00 – 10:00 pm

Environmental conditioning

- Number of people
- Open/close windows
- Open/close doors



Preliminary results



	New building	Recent building	Old building
PM₁	2.2 ± 0.6 2, [1.1 - 3.6]	3.9 ± 1.07 3.5 [3 - 6.3]	6 ± 1.8 5.3, [1.7 - 14]
PM_{2.5}	2.3 ± 0,6 2.2, [1.2 - 3.9]	4.2 ± 1.1 3, [3.1 - 6.6]	6.2 ± 2.3 5.8, [1.9 - 14]
PM₁₀	2.4 ± 0.6 2.2, [1.2 - 4.1]	4.2 ± 1.1 3.8, [3.2 - 6.6]	6.4 ± 2.6 5.9, [1.9 - 15.6]
Total fungal count	3.1 ± 3.4	4 ± 3	9.2 ± 8.6
CFU/m³	2, [0 - 15]	3, [1 - 11]	7, [1 - 44]



Preliminary results



CFU	PM ₁	PM _{2.5}	PM ₁₀
> 25/m ³	6.3 ± 1.6 5.8, [4.3 - 8.8]	6.7 ± 1.7 6.1, [4.6 - 9.4]	6.7 ± 1.7 6.2, [4.7 - 9.5]
10 - 25/m ³	6.5 ± 4.4 5.6, [1.1 - 28.6]	6.7 ± 3.2 5.9, [1.2 - 17.3]	6.9 ± 3.6 6, [1.2 - 18.6]
< 10/m ³	4 ± 2.2 3.3, [1.1 - 14.2]	4.3 ± 2.5 3.6, [1.2 - 16.9]	4.5 ± 2.7 3.6, [1.2 - 19.2]



Preliminary results



CFU/m ³	PM ₁	PM _{2.5}	PM ₁₀
26	5,6	5,9	5,9
30	4,3	4,7	4,7
31	7,4	7,9	8
37	5,9	6,4	6,5
43	8,8	9,4	9,5
44	5,5	5,8	5,9

in every sample with
**CFU > 25/m³, PM₁,
PM_{2.5}, and PM₁₀**
were all **above 4**



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Conclusion

- Our preliminary findings suggest a **possible association between CFU and PM**
- We are now extending the study to areas with **higher PM contamination**, such as those affected by construction work

THANK YOU!

