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ACTIVE OR PASSIVE CONTINUOUS AIR MONITORING IN CLEANROOM?

The measurement of the number of micro-organisms in cleanroom can be executed by an active or passive method.

THE ACTIVE METHOD

The method is applied using an air microbial sampler in which the air is drawn into the aspirating chamber where it impacts on the agar surface of a Petri dish with programmed time and volume of air. After incubation, the number of colony forming unit (cfu) will provide a clear evaluation of air quality in the considered environment because it is established a cfu/cubic metre value.

THE PASSIVE METHOD

This method consists of an open agar culture plate, typically a 90 mm Petri dish with a media for total bacterial count or total fungi, positioned on a surface to collect the micro-organisms that by gravity fallen down on its surface. After incubation, the number of colony forming unit (cfu) will provide just an indication of air quality in the considered environment. This method is called “settle plates”.

THE ACTIVE METHOD vs THE PASSIVE METHOD

A comparative test to show the huge difference between the two methods can be easily performed by any microbiological laboratory: active monitoring is more efficient from 25 to 45 times.
In simple words, the micro-organisms that are collected on the agar surface by sedimentation are only a small part of the microbial population present in the environment.

THE CONCLUSION

The Passive Method is low cost, simple and should be applied in environment where quantifiable results are not needed. The active method is an accurate measure of air quality and therefore a preferred option in controlled environments as continuous monitoring like the Grade A cleanroom.

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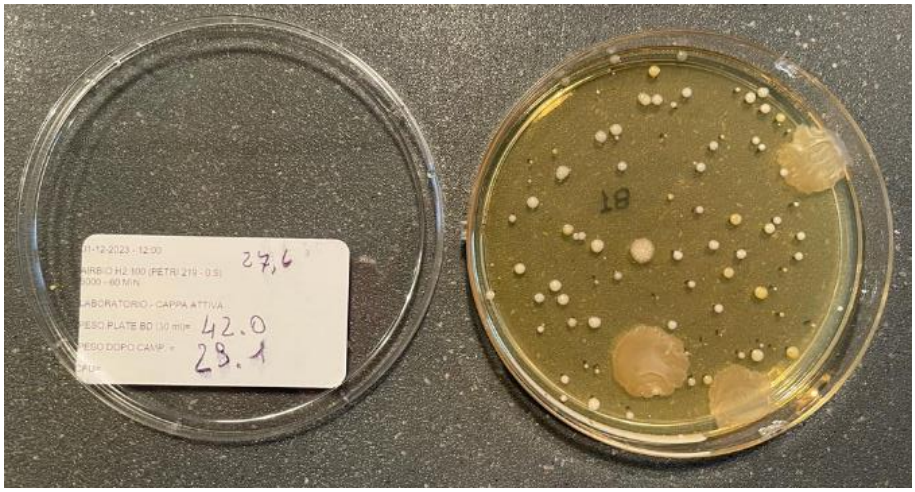
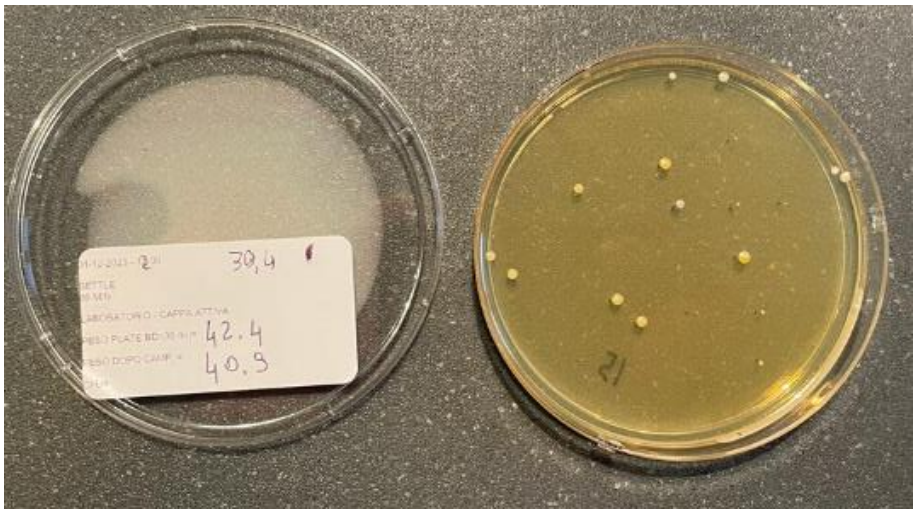
TYPICAL COMPARATIVE EXAMPLE

The results show the difference of an active air sampling and a passive air sampling in the same room.



CFU/PLATE WITH ACTIVE SAMPLING



CFU/PLATE WITH PASSIVE SAMPLING

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