

MYCOLOGICAL QUALITY CONTROL CONSULTANCY¹

Report on the evaluation of the UV-SANI 55 sanitizing unit using *Aspergillus niger* as a test organism

Equipment

The equipment under test was a UV-SANI 55 sanitizing unit with a 55 WATT UVC lamp in enclosure and a 70 square cm fan blowing through the unit as supplied by Ozone Purification Technologies.

Test site

The Food, Environmental and Health Research Group, University of Johannesburg was used to evaluate the ability of the UV-SANI 55 to kill the spores of *Aspergillus niger var. niger* (SRRC358) Provided by Dr Maren Klich, Southern Regional Research Laboratories, USDA, New Orleans)

Method

Potato dextrose agar plates from Selecta-MEDIA were used for the experiment.

One fungal culture, *Aspergillus niger* was grown on potato dextrose agar (51-0159) plates obtained from selecta-MEDIA to generate fungal spores.

Spores were injected into the UV-SANI 55 sanitizing Air-Unit by tapping the culture plate with a spatula in front of the air intake. The spores were collected at the outlet of the system by placing a PDA plate for five seconds in front of the exhaust. This procedure was repeated three times. A control sample was also taken with the sterilizing unit turned off.

The plates were incubated at 28°C for seven days and examined for growth.

Results

The plates exposed to *Aspergillus niger* spores after passage through the unit showed a decrease of 75% in fungal colonies (as compared to the control with the unit switched off), from $>10^6$ counts (plate completely covered) to 3 counts per plate (average of three plates).

Conclusion

From these results it can be seen that the UV-SANI 55 sanitizing unit, although not completely sterilizing *Aspergillus niger* spores (a very difficult spore to completely kill) can significantly reduce the numbers in a highly concentrated aerosol not found under normal air conditions.

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