What's in Your Air? A Microbial DNA Analysis of a Filter System

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The purpose of this study was to determine if allergen causing proteins are passing through the different filters of our school. Our school has three different filter systems of all different ages. The high school being the oldest and is set up in a strait pattern stacked on top of each other. The art room, the second oldest filter system has one filter whereas the others have multiple filters. The newest system is the elementary system, this system is set up in a zig zag pattern and the filter receives the air from to the right of the filter so the air doesn't have to travel through pipes to reach the filter. This allows dirt to sit and continue to collect dust that needs to be filtered out which is why it comes up as one of the worst systems. We found that the art system is the worst due to the results of the gel. We tested the Internal transcribed spacer (ITS) gene primer in PCR to find out if we had the presence of the Curvulriai lunata, a fungus that causes allergic rhinosinusitis. We found traces of this gene in all of the filters, but the only ones that had the presence of the gene after the filter in the air output were the art and elementary systems, and from the gel run we concluded that the most concentrated was the art room making it the worst filter system.

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