The Microbiological Assessment of Air Quality and Surface Contamination in Agricultural Workspaces

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I conducted this experiment to observe the air quality in agricultural settings once learning how unsafe the air pollution has become in these environments. I tested the air quality by placing agar plates of three different types (PDA, MacConkey, and Nutrient) in an office, storage area, and workspace of each shop. I tested these areas in six shops total throughout the project. I then used two air quality monitors. The first one tested the TVOC, AQI, CO, CO2, and HCHO. The second air quality monitor determines the amount of small and large particles present in the air. I used both of these to analyze the microbes present in the sample areas. To test the amount of microorganisms present on surfaces, I swabbed commonly touched surfaces; a wrench, sink handle, door knob, and workbench. I swabbed these surfaces and transferred the bacteria from the surfaces to the agar plates previously mentioned to further analyze the presence of a wider range of microorganisms. I analyzed the results and have concluded the air farmers inhale in their everyday life is generally not causing significant damage to their alveoli in their lungs, but excessive daily exposure to the increased amount of microbes present in these environments could cause significant irritation and harm to the human body. From the surface contamination aspect of the experiment, I indicated the surfaces that farmers touch on a daily basis contain potentially harmful pathogens that are known to cause infection in the body. Increased occurrence of disinfecting these commonly touched surfaces would be effective in preventing infection for those in the examined environments.