Conclusions: Chemical activation is an effective method to prepare highly microporous activated carbon. Sisal derived activated carbon is an attractive alternative adsorbent for respirators because of their high surface area, large adsorption capacity, light weight and abundant renewable natural supply.

33. Evaluating Students and Instructors' Exposure to Formaldehyde in an Anatomy Teaching Laboratory

M. Nguyen, S. Que Hee, R. Veal, J. Gibson, N. Yu, University of California Los Angeles, Los Angeles, CA.

Objectives: This study looked to 1. Measure ambient levels of formaldehyde in an anatomy laboratory during dissection of cadavers, and 2. Compare results to recommended and regulatory exposure levels.

Methods: A Human Dissection Anatomy class was asked to participate in this project. On the first day of laboratory instruction, industrial hygienists measured the participants' exposure to formaldehyde vapor using both a direct-reading instrument and personal breathing zone (PBZ) sampling involving lab instructors. Personal breathing zone sampling was facilitated using a personal pump and silica-gel tubes. Sampling was conducted for the duration of the lab, and an eight-hour Time Weighted Average (TWA) was calculated, assuming no exposure to formaldehyde for the remainder of the day. Another assessment was conducted approximately one month following the initial visit. The same procedures were followed. The cadavers were intact on the first day of lab, and the same cadavers were studied for the duration of the course.

Results: Real-time measurements of formaldehyde on the first day occasionally exceeded the ACGIH Short Term Exposure Limit (STEL) of 300 ppb and the Cal-OSHA TWA Action Level of 500 ppb. The maximum instructor TWA on the first day was 43 percent of the Cal-OSHA Permissible Exposure Level (PEL) of 750 ppb. Formaldehyde measurements on the second day did not exceed any occupational exposure limits; a drop of 54 percent on average was observed. Instructors' TWA exposures dropped to 13 percent of PEL on the second day.

Conclusions: Exposure to formaldehyde for the duration of this course is not considered to be a significant health hazard for students and instructors. Downdraft tables would serve as an effective engineering control.

34. Pilot Study of the Indoor Microbiome of Green-Renovated vs. Non-Renovated Homes

K. Chatterjee, T. Reponen, E. Kettleson, C. Schaffer, R. Indugula, A. Adhikari, S. Grinshpun, University of Cincinnati, Cincinnati, OH, S. Vesper, U.S. EPA, Cincinnati, OH.

Objectives: This study looked to describe the differences in the mold and bacterial indoor microbiome between green-renovated and non-renovated homes.

Methods: Dust samples were collected by vacuuming the living room floor in 20 green-renovated and 20 non-renovated homes in Cincinnati, OH. For carpeted floors, a 2-m^2 area was vacuumed at a rate of 2 min/m^2, and for hardwood floors dust was collected from an entire room at 1 min/m^2. Collected dust was sieved through a 355-µm sieve, 5 mg of the resulting fine dust was analyzed using MQPCR for the 36 molds that make-up the Environmental Relative Moldiness Index (ERMI). For bacterial pyrosequencing analysis, DNA extracts from 50 mg of the dust underwent 454 pyrosequencing using the 28F-519R bacterial assay which covers the variable regions V1–V3 on the 16s rRNA gene.

Results: The renovated homes tended to have, on average, more dust (5.6 g vs 4.2 g per home). ERMI values were higher in non-renovated homes (5.2 vs. 3.6) but not significantly ($p=0.2$). From the pyrosequencing data it was determined that the three most abundant bacterial phyla in the dust were Proteobacteria, Actinobacteria, and Firmicutes (39%, 26%, and 20%) of the operational taxonomic units (OTUs), respectively. In renovated apartments, the relative abundance of Firmicutes increased significantly ($p=0.01$) to 28% of the OTUs, which was offset by decreases in the Proteobacteria and Actinobacteria proportions. The increase in the Firmicutes abundance was driven primarily by increases in the human associated genera *Streptococcus, Lactococcus*, and *Lactobacillus*.

ABSTRACTS

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