Shift in Aeroallergen Indices, Allergy and Asthma Cases and an AHPCO Air Purifier to Reduce Indoor Airborne Pathogens and VOCs

Dr. Nabarun K. Ghosh, PhD 1, Dr. Jeff Bennert, PhD CTN 2, Dr. Constantine K. Saadeh, MD FAAAAI 3 and Ms. Griselda Estrada, BS 1

1. West Texas A&M University, Canyon, TX, 2. AIR OASIS, Amarillo, TX, 3. Allergy ARTS ACCR, Amarillo, TX

Rationale:

Aeroallergen data of Texas Panhandle for 12 years revealed a gradual shift in aeroallergen index with the warmer climate and shift in flowering seasons. We assessed an air purifier that uses Advanced Hydrated Photocatalytic Oxidation Technology.

Methods:

AHPCO Technology was used with Air Oasis air purifiers to improve the indoor air quality. They were assessed for net reduction of bacteria, fungi, VOCs in a negative pressure laboratory with the specific effect on Methicillin resistant Staphylococcus aureus, MRSA. A fiber glass chamber (AO chamber) was built to assess and evaluate the performance and safety of the air purifiers. Blood, Human cell culture and plant cells were exposed to the AO chamber and UV chambers to compare the exposures. Images were captured with FITC, TRITC Filters with a BX 40 Olympus Microscope.

Results:

Since 2007, Asthma cases doubled in Amarillo compared to the state of Texas. The AHPCO air purifier improved the indoor air quality by reducing the aeroallergens and VOCs. Human blood samples and cell cultures were exposed to the AO chamber and UV chamber with same duration we found no anomalies with the AO chamber. With UV ray, RBCs and WBCs exhibited cytological instability. With a short exposure to UV rays the cells lysed in cell culture leaving residues that could be detected with TRITC imaging.

Conclusions:

Early Flowering and shift in aeroallergen indices possibly caused an increase in asthma cases. Experimental data showed that the Air Oasis air purifiers reduced the symptoms of allergy and they are safe to use.

Title: Shift in Aeroallergen Indices, Allergy and Asthma Cases and an AHPCO Air Purifier to Reduce Indoor Airborne Pathogens and VOCs

Submitter's E-mail

Address: nghosh@wtamu.edu

Keywords: Academics, Air Pollution and Allergens: Indoor

Presenting Author

Dr. Nabarun K. Ghosh, PhD, West Texas A&M University

Author

Dr. Jeff Bennert, PhD CTN, AIR OASIS