Tillandsia and Indoor Air Pollutants

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The purpose of this study was to see if air plants could be used as an indicator of indoor air pollution by the way the plants responded. Epiphytic bromeliads were placed in various polluted indoor locations including an auto shop, wood shop, bathroom, bedroom, and hair salon for six weeks and were watered biweekly. Changes in plant health were recorded by measuring bract curl, dead ends, cankers, spots, scars, dead leaves, severed ends, and tears. The most damage occurred to plants in the auto shop; followed by the hair salon, bathroom, bedroom, and the least amount of damage occurred to plants in the wood shop. This may be due to the the smaller average particle size of the volatile organic compounds in the auto-shop had the smallest average particle size (0.0001-1.0 microns) while the saw dust particles in the wood shop were the largest (10-10,000 microns): too large to be soluble or transcend the minuscule spaces between the trichomes and obstruct them. The results indicate that these particles could be small enough to enter into the lower levels of the human respiratory tract and cause respiratory complications or cancer. The smallest particles may penetrate to the alveolar region where inhaled gases can be absorbed by the blood.

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