C25 Mold Problem? How Would You Know?

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The goals of this presentation are to (1) characterize the mold problem, (2) evaluate the usefulness of indoor air quality tests and standards, (3) determine the plausibility of causation, and (4) develop a mold standard for the protection of human health.

Insurance companies are re-evaluating rates, coverage, and exposure to liability after a recent jury award of $32.2 million to homeowners with a mold problem (Ballard v. Fire Insurance Exchange). Even before this award, Farmers Insurance estimated mold claims cost it $85 million in 2001. Industry wide, during this same year estimates of insurance claims relating to mold problems exceeded $500 million. However, the impact of mold problems extends far beyond the insurance industry. Liability for mold-related problems affects how architects, engineers, remediation contractors, home inspectors, doctors, and environmental consultants do their jobs. It appears that dealing with mold problems will be a multi-billion dollar industry before the end of the decade.

With nowhere to turn, people are pushing for legislative action in California, Texas, Florida, and several other states. The California Legislature recently enacted SB 732-Oritz, authorizing the California Department of Health Services to establish permissible exposure limits (PELs) for molds, while requiring due-diligence disclosure of moldrelated adverse health conditions by property owners, and licensing of persons involved in the investigation and abatement of mold. Under increasing public pressure to protect human health and property, state and federal agencies are beginning to wake up to the epidemic of mold-related problems that appears to be sweeping across the country.

Molds are fungi, ubiquitous organisms that make up approximately 25% of earth's living matter. They play an important role in the breakdown of organic matter like leaves, wood, and plant debris. However, not all molds flourish in indoor environments. To flourish, molds require moderate temperatures (i.e., between 40 and 100°F), a nutrient base (such as the cellulose in wood or paper), and moisture. Exposure to molds can occur through ingestion, dermal contact, or inhalation. Exposure to molds can cause immunosuppression, immunodepression, emesis and diarrhea, weight loss, nervous disorders, cardiovascular alterations, skin toxicity, decreased reproductive capacity, bone marrow damage, flu-like symptoms, sore throat, headache, dizziness, dermatitis, fatigue, and general malaise. Asthmatics tend to be particularly sensitive to mold with 10 to 32% of all asthmatics showing sensitivity. In fact, immuno-compromised people such as those with HIV/AIDS or organ transplant are especially susceptible to pathogenic molds.

Over the last 10 years, microorganisms have become the primary source of indoor air contamination, accounting for as much as 50% of all indoor air quality (IAQ) cases. For the California Department of Health Services, visible growth is sufficient to indicate a mold problem, yet nearly half of the buildings with microbial IAQ problems do not present visible signs. Consequently, thorough and competent testing is required to evaluate indoor environments for mold. Generally, air sampling alone does not provide sufficient evidence to indicate a mold problem. Because there are no official standards or guidelines for regulating molds in indoor air, determining that a mold problem exists can be problematic. Still several federal and international Agencies have adopted acceptable limits for the number of colony forming units in air.

This presentation will characterize the nature of IAQ mold problems in the home and office environment. The presentation will identify useful approaches to testing indoor environments for mold in indoor air and offer an approach for assessing the plausibility that mold caused adverse health effects in an exposed human population. Finally, this presentation will offer an approach for deriving a mold IAQ standard for the protection of human health.

Toxic Mold, Tests, Standards

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