

IAQ RADIO+

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Jeff May

Life and Times of an IEQ Pioneer

Good Day and welcome to IAQ Radio+ episode 770 blog. This week we welcomed IEQ Pioneer Jeff May for a Life and Times interview. The meeting focused on indoor air quality (IAQ) consulting work, where the discussion covered various IAQ issues, including odor detection methods, proper filtration systems, and the impact of central air conditioning on respiratory health, with particular attention to maintenance requirements and environmental factors affecting indoor air quality.

Jeffrey C. May is co-author of the textbook “Spaceship Earth: Physical Science,” as well as author or co-author of four books on indoor air quality (IAQ) including “My House is Killing Me”. A nationally known speaker on IAQ topics, Jeff combines his education as an organic chemist with his professional experience as a teacher and building inspector to help people improve the environmental conditions where they live and work. He is committed to working with people who like himself suffer from allergies, asthma, and chemical sensitivities. He grew up in Forest Hills, NY and resides in Massachusetts with his wife and co-author Connie L. May.

Nuggets mined from today's episode:

Jeff May shared his background, including his transition from teaching chemistry to home inspection and eventually to indoor air quality work. While working in real estate, Jeff's wife Connie suggested that Jeff become a home inspector. Jeff's wife Connie arranged for Jeff to shadow a home inspector and Jeff was hooked. ASHI chapters (homeinspector.org) have a ride-along program for those considering home inspection as a career. Jeff stressed the importance of home inspectors understanding both Building Science and Mechanical Systems. Jeff's work as a home inspector preferred him for his career in IEQ.

Author: Impressed with Jeff's skills, a client who worked for Johns Hopkins Press suggested he write a book. The outline came about when stuck in a traffic jam for 5 hours; Jeff created the outline verbally while wife Connie took dictation.

Jeff May's first book was inspired by both his personal and a client's experience with mold problems in her home. The title of the book was "My House is Killing Me" came from a phone message left by the client of Jeff's office answering machine.

Sampling Self Analysis: Jeff is among the small minority of IEQ professionals who are skilled and experienced enough to microscopically analyze their own samples. By taking courses and through books and self-study Jeff has learned how to analyze his own samples via microscopy. Jeff often takes 15-20 samples on an inspection and doesn't charge clients for sampling. Jeff has analyzed tens of thousands of samples. Through his microscope, Jeff looks for allergens (e.g.) mold, pollen, insect parts & frass, allergens, "surrogate allergens", etc. Jeff defines "surrogate allergens" as nonallergic substances to which allergens attach and are transported such as corn starch donning powder used in latex gloves, corn based kitty litter, rust particles from puddles in air handlers, etc. Jeff disagrees with the EPA's preference for visual inspections over sampling and lab analysis. Jeff discussed multiple problems which were resolved by sampling and analysis such as mold in a pillow and char fragments in a mattress.

Jeff's concerns over the accuracy of mold analysis performed by mold labs were reinforced by a study during which identical samples were sent to different labs for analysis. The lab results demonstrated varying degrees of accuracy. Jeff explained that only a few lab report chains/clusters of mold spores which are indicative of a problem. He recommends asking your lab to report chains/clusters of mold spores.

Retirement? Jeff has slowed down some, he still works several days a week.

Allergist vs Pulmonologists: Jeff opined that allergists seem unconcerned about allergens, while pulmonologists facing life threatening patient conditions refer him to patients.

Dust is food. Dust is comprised of skin particles, starch, insect parts, insect frass, etc. upon which microorganisms and insects feed. *Because Dust is Food-Dust is the Devil.*

HVAC systems: According to Jeff, HVAC systems are risky, especially those which provide cooling. System cooling coils are difficult to access for cleaning and collect

dust which in combination with moisture amplifies microbial growth causing IAQ issues for building occupants. Jeff discussed a novel method he uses for sampling the interior of forced air HVAC systems. After opening windows for ventilation, he places a Burkard spore trap sampler above a supply register while tapping on the ductwork to discharge dust/particulate.

He emphasized the importance of proper filtration and regular cleaning to prevent dust and microbial growth in air conditioning systems. Jeff also shared insights from his research on the link between central air conditioning and respiratory problems, highlighting the need for regular maintenance of heat pumps and mini-splits. RadioJoe reminder to always use a flashing when inspecting HVAC components.

Recommended Reads: In addition to reading his books; Jeff recommended Carl Zimmer's book *Airborne* as an important read. ("the long-forgotten pioneers of aerobiology including William and Mildred Wells, who tried for decades to warn the world about airborne infections, only to die in obscurity.")

Patch Test- Jeff May is credited for inventing the "Patch Test" for odors. While investigating an odor problem in a law office, Jeff sniffed various building materials and contents and found that a Yellow Pages phone book was retaining odor and asked an employee of the firm to confirm that was the malodor of concern? Jeff realized that paper could retain odor. Jeff's patch test consists of a paper towel folded in half placed on the target surface and then covered with aluminum foil and held in place by painter's tape.

Mold Spore Chains/Clusters: Jeff emphasized the importance of examining mold spores in chains or clusters, which many labs do not report.

Indoor Air Quality Sampling Challenges

Jeff discussed his experience in indoor environmental quality consulting, highlighting the challenges of the profession due to opposition from large industries

Most Rewarding Project: Jeff shared an interesting case where a vibrating hardwood floor in an attic caused sleep disturbances due to air pressure oscillations, which was resolved by adding books to change the floor's frequency.

Humidifiers: The group also discussed humidifier preferences and safety, Jeff prefers warm mist humidifiers.

Mold remediation practices: Jeff emphasized the importance of controlling relative humidity in basements and properly sealing framing after remediation.

More on mini-splits- Jeff noted that their energy efficiency comes at the cost of poor air filtration, requiring more frequent cleaning in dusty environments, though Linda Wigington (ROCIS.org) suggested proper installation and air purification can help mitigate these issues. Odors from mini-split unit are caused when moisture meets dust and odorous microbial amplification occurs.

The Future of IEQ: The future is sad. There is no University Level training in IEQ. Jeff expressed his ongoing frustration with the challenges to overcome opposition from large industries (e.g. asbestos, lead paint, fiberglass, chemical) who deny their products pose health risks to building occupants.

Mold panic and the cure: People terrorize themselves by searching for help and finding misinformation on the internet. “Bleach doesn’t kill mold, it makes it angry and it makes more mycotoxin.” The cure is to read Jeff’s book: Mold Survival Guide.

Mold that swims: While examining water from a humidifier under microscopy Jeff found mold spores with tails. “Motile refers to the ability of an organism to move independently using metabolic energy. This term is often used in biology to describe organisms that can move spontaneously, as opposed to those that are sessile or immobile.” Wikipedia

Biggest Lesson Learned: Don’t fix anything. Once you fix it, you own the problem.

Common Mold Remediation Mistakes:

1. Leaving fiberglass atop the foundation.
2. In basements that have not been continuously dehumidified, invisible mold is commonly found on wood. Wood should be sealed.

Wartime Economy: War between energy efficiency and air quality.

Z-Man signing off