

Lessons Learned

Mold Contamination Risk in Cold Rooms



What Happened?

Cold rooms are an essential component of many biomedical research laboratories, used for temperature-sensitive storage and incubation. A laboratory was storing samples and supplies in cardboard boxes in their cold room. Cardboard and ambient humidity in the air led to **mold growth**. The mold contamination quickly spread across the cold room; contaminating research samples, supplies, and equipment. There are typically no adverse health effects associated with moderate mold exposures among healthy individuals. However, individuals with existing mold allergies or immunocompromised may experience adverse health effects from mold exposure. The mold-infested cold room, which had to be cleaned at an expense to the laboratory, led to the loss of use of the cold room and most importantly, resulted in the **loss of crucial research samples**.

A contractor was hired (through Engineering & Maintenance) to conduct a full decontamination of the cold room. The cleanup required the cold room to be vacated, and items moved to a loaner cold room. The laboratory was tasked with decontaminating (wiping down) all samples, supplies, and equipment within the cold room.



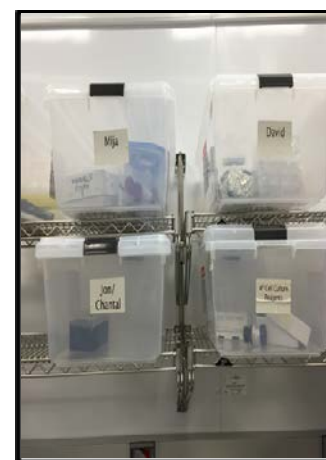
Mold contamination on cardboard boxes used for cold room storage.

Why Did This Happen?

- Laboratory supplies were stored in cardboard boxes. Cardboard is a porous/absorptive material that harbors moisture and promotes the growth of mold.
- Failure to address or report the issue when it was first discovered; which led to the uncontrolled growth of mold throughout the cold room.
- Irregular cleaning of the cold room by laboratory staff.

Lessons Learned

- Cardboard boxes or other absorptive materials should not be used for storage. Research samples and supplies can be stored directly on shelves, or in **non-porous secondary containment**, such as plastic boxes.
- **Weekly inspection and maintenance** should be performed by all laboratories utilizing the cold room. With multiple users, the buildup of trash and organic matter that promotes the growth of mold may occur. As such, regular cleaning and prompt disposal of wet or damp organic materials (e.g., paper products, “blue chocks”) is required.
- Laboratories must **immediately clean up spills** from water or non-hazardous buffers and media, or **contact EHS** if the spill involves a hazardous chemical. Moisture promotes the growth of mold and may lead to rust or corrosion of metal surfaces (e.g. shelves, lab equipment).
- Water leaks or damage to the structure of the cold room should be **repaired promptly** by submitting a [work order](#) to Engineering and Maintenance.
- Re-occurring moisture build-up issues and/or mold growth must be **reported to EHS**.
- For additional guidance, please review **EHS Cold Room Guidelines** posted outside of your cold room.



Use of plastic containers for cold room storage, which prevent mold growth.

