MOLD Control At MSU
Special Topic:
Walk-in Refrigeration Units

Introduction…

As concerns about indoor mold contamination become more prevalent, so does the need for standardization of procedures to assess, prevent and remediate the contamination within the facilities at MSU. Specifically, walk-in refrigeration units (i.e. coolers) are inherently contaminated with mold and mold spores due to the high moisture levels within the units. Recently, several walk-in coolers were found to be severely contaminated with visible mold. The estimated cost of professional remediation was nearly $50,000. Unfortunately, this excessive buildup of mold was not an isolated incident and was preventable, which is the focus of this informational document.

Why should we be concerned?

In addition to and worse than the financial burden, mold can cause or aggravate certain illnesses. Some people can develop sensitivities to various species of mold. For these people, mold exposure can cause congestion, wheezing, or eye and skin irritation. It can aggravate asthma and other respiratory disorders as well. For others, exposure can result in more severe reactions, including fever and shortness of breath. Although it is very rare, exposure to certain species of mold can also cause lung infections.

Defining the problem…

Mold belongs to the fungi kingdom. The ubiquitous nature of mold allows for growth in both indoor and outdoor environments. Specifically, warm, moist environments strongly support mold growth; however, colder temperatures where the moisture level is high can also support mold growth. Refrigerators and walk-in cooler units are ideal environments for mold growth due to the high moisture levels and abundant food sources such as paper, cardboard, agars and medias, caulk etc. Additionally, mold growth in these walk-in units is exacerbated by temperature abuses resulting from frequent entries/exits and repair shut downs. Mold growth in refrigeration units is a growing problem on campus, especially in older buildings where the design and insulating materials are out- dated. With that mentioned, frequent visual observations, cleaning and maintenance must become standard operating procedures for all MSU facilities containing walk-in refrigeration units.

What should you do?

First it is important to identify the mold in your walk-in refrigeration units. Obvious visible mold includes the black/grayish growth that occurs around the sinks, on bench paper, cardboard or other cellulosic materials, and on the walls, ceilings, floors and laboratory equipment. However, the “not so obvious” mold growth includes the white, powdery substances commonly found on all surfaces of a cooler as well. Most people assume this is oxidative degradation, but it is a species of mold and can cause the ill health effects.

Second, the coolers need to be cleaned on a bi-annual basis. If the coolers are shared among several groups, then alternate cleaning responsibilities. Although the cleaning sounds like a huge undertaking, it is quite simple. Remove all paper products from the walk-in unit. Then use a slightly diluted (similar to dilution when washing dishes) general dish detergent (we recommend Dawn dishwashing soap), and wipe all surfaces down with a cloth towel. Wipe up any excess water to prevent additional moisture from being present in the cooler. Recommended personal protective equipment would be splash goggles, lab coat and disposable gloves.

Third, be prepared to show documentation of cleaning to ORCBS personnel when laboratory inspections are conducted. Due to the health and financial concerns associated with mold contamination within walk-in coolers, ORCBS will be addressing documentation during laboratory inspections to be certain that the walk-in refrigeration units at MSU and satellite locations are properly maintained.

Tips to help slow or minimize mold growth in walk-in refrigeration units:

- Limit all paper products, agars, medias in the unit -- these are excellent sources of food for mold
- Remove/dry any excess water from the unit to assist with moisture control
- For long term shut downs (greater than one day), thoroughly clean the unit with dish detergent and keep the doors of the unit open to allow for complete drying of the unit. Do not close the doors until the unit is ready to be re-entered into service

For questions or consultation, please contact the Biosafety Team at ORCBS (517) 355-0153.