

## Bird and Bat Droppings

### Introduction

While the hazards of bird and bat droppings are generally exaggerated, there is some risk of disease wherever there are large populations of roosting birds or bats.

The most serious health risks arise from organisms that grow in the nutrient-rich accumulations of droppings, feathers, and debris under a roost — particularly if roosts have been active for years.

The two most common types of fungal diseases associated with bird and bat droppings are histoplasmosis and cryptococcosis.

### Common Diseases

#### Histoplasmosis

Histoplasmosis is caused by a fungus (*Histoplasma capsulatum*). The disease is transmitted to humans by airborne fungus spores from soil contaminated by bird and bat droppings.

Fresh bird droppings do not contain *H. capsulatum*. Rather, bird manure is a nutrient source for the growth of *H. capsulatum* already present in soil. Soil must be enriched by these droppings for three years or more before the disease organism can reach significant levels.

The active and inactive roosts of blackbirds (e.g., starlings, grackles, and cowbirds) have been found to be heavily contaminated with fungus spores. *H. capsulatum* contamination may also be found in the habitats of pigeons and bats, as well as poultry houses with dirt floors.

Unlike birds, bats can become infected with *H. capsulatum* and consequently can excrete the organism in their droppings.

#### Cryptococcosis

*Cryptococcus neoformans* (*C. neoformans*) is found worldwide. Its main habitats are debris around pigeon roosts and soil contaminated with decaying pigeon or chicken droppings. Humans become infected by inhaling the airborne organism in the form of dehydrated yeast or as spores.

Pigeon droppings appear to be the most important source of the fungus *C. neoformans* in the environment. The fungus is typically found in accumulations of droppings around roosting and nesting sites. *C. neoformans* has been found in as many as 84 percent of samples taken from old roosts. Even old and dry, bird droppings can be a significant source of infection.

#### Other Associated Diseases

- Psittacosis
- Toxoplasmosis
- Rabies, viral diseases

#### Individuals at Risk

Anyone who is exposed to these hazards in sufficient quantity is at risk of developing disease. However, certain demographic groups are of particular concern:

- Infants and the elderly
- Persons with compromised immune systems
- Persons with a history of respiratory illness

#### Removal Considerations

When an accumulation of bat or bird manure is discovered, simply leaving the material alone if it is in a location where no human activity may be the best course of action. If this is not the case and the potential for human exposure exists, methods of controlling human exposure risks must be implemented during the removal process.

These organisms are spread by becoming airborne and subsequently inhaled by humans. Therefore, it is critical to avoid disturbing the material in order to prevent it from becoming aerosolized. A brief inhalation exposure to highly contaminated dust may be all that is needed to cause infection and subsequent development of fungal disease.

Small accumulation of droppings from a few birds or bats, can generally be cleaned up with soap and water. If large quantities of bird or bat droppings are present, contact an environmental engineering consultant for advice.

Prior to shoveling, scraping or sweeping droppings, spray with water to reduce the amount of dust aerosolized during the cleanup process. Adding a surfactant or wetting agent to the water may further reduce the amount of aerosolized dust. An alternative method is to use an industrial vacuum cleaner with a high-efficiency (HEPA) filter to bag contaminated material.

After removal is complete, a visual inspection should be performed to identify any remaining residual dust or debris before considering the area clean.

## Disinfecting Contaminated Material

Disinfectants have occasionally been used to treat contaminated soil and accumulations of bird or bat manure when removal was impractical or as a precaution before a removal process was started.

However, the only disinfectants that have been proven to be effective contain highly toxic chemicals such as formaldehyde. Therefore, these products may only be applied by qualified individuals.

## Disposing of Manure

Prior to removal, check with local government agencies to verify the appropriate methods for disposing of bird and bat droppings.

## Removal and Cleanup

Workers should follow certain precautions to minimize risk from disease organisms in the droppings:

- Cleanup should be done by healthy individuals.
- Wear a HEPA particulate respirator that can filter particles as small as 0.3 microns. Remember that if you wear any type of respirator for any reason, frequency, or duration, you may need to be included in a formal, written, respiratory protection program (see 29 CFR 1910.134).
- Wear disposable protective gloves, hat, coveralls, and boots.
- During the cleanup, seal heating and cooling air ducts or shut the system down.
- Moisten the droppings with a light mist of water to keep dust and spores from becoming airborne.
- Put droppings into sealed plastic garbage bags and double bag.
- When finished and while still wearing a respirator, remove protective clothing and place it in a plastic bag.
- Wash or shower at the work site after clean-up.
- Modify the structure to prevent birds or bats from reestablishing the roost.

## Questions

If you have questions, please contact Health, Safety, and Risk Management at (612) 626-6002 or [hsrm@umn.edu](mailto:hsrm@umn.edu).