

Airborne pathogens

Human Health Risk

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Ecological Risk

Socioeconomic Risk

Airborne pathogens include fungal spores and bacteria that are released to the air during wastewater treatment, sanitary landfill operations, composting, and various farming practices. Sources of these pathogens include fungal growth associated with warm wet areas, and agricultural activities that generate large quantities of organic dusts that may contain high concentrations of bacterial toxins. Some pathogens are associated with bird or bat droppings. Human health effects include respiratory infections, allergic responses, eye, nose and throat irritation, as well as more severe cases involving fever and shortness of breath. Related reports include *Legionella*, Hantavirus, indoor microbial pollution, and indoor asthma inducers.

What's at risk?

Exposure to low levels of airborne spores is universal, but disease is uncommon. Infants and the elderly are particularly subject to fungal infections. Individuals with compromised immune systems or other underlying disease are more susceptible to the health effects that may result from exposure to airborne pathogens. Asthmatics are also especially sensitive to fungal allergens. Workers near concentrated sources such as composting facilities are at increased risk of exposure, as are people who are occupationally exposed to higher than normal concentrations of bird or bat droppings.

What are the human health impacts in New Jersey?

There is very little information regarding the number of illnesses that may be attributed to airborne pathogens. Thresholds for allergic response are regularly exceeded near composting facilities. In some cases, elevated levels may exist up to 1 kilometer from the facility. Dust-inducing agricultural practices can produce concentrations of bacterial toxins far in excess of those known to affect lung function. Natural sources such as bird and bat droppings may also result in localized exposures to elevated levels of pathogens.

What's being done?

There are no regulations on airborne pathogen generation. Occupational guidance is available for protecting workers from exposure.

Socioeconomic costs probably run in the tens of millions.