

# FOCUS ON FACTS

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## Gases and dust in hog barns

The hog industry has grown greatly in the last 10 years. If you work in a hog barn, you may come in contact with a variety of hazards. Harmful gases and dust are the main hazard to your health.

### WHY ARE SOME GASES AND DUST IN THE BARN HARMFUL?

- Many gases are released from the breakdown of hog feces and urine on the floor or in manure storage areas. Some of these gases can be harmful to you if the ventilation in the building is not enough or if certain tasks are not done safely.
- The amount of gas in the air may be higher in the winter because less fresh air is coming into the building. But in the summer, hot weather increases the amount of gas released from the manure.
- The dust in hog buildings comes mainly from dried feces and from hog feed. Harmful gases can stick to the dust. The dust particles are very small and can carry gases deep into your lungs where they cause you more harm.
- High dust levels make it difficult to keep heaters and equipment

working well. Harmful levels of carbon monoxide can come from gasoline or propane powered heaters or pressure washers that are not working properly.

### HOW WILL I KNOW IF THE AIR IN THE BARN IS HARMING ME?

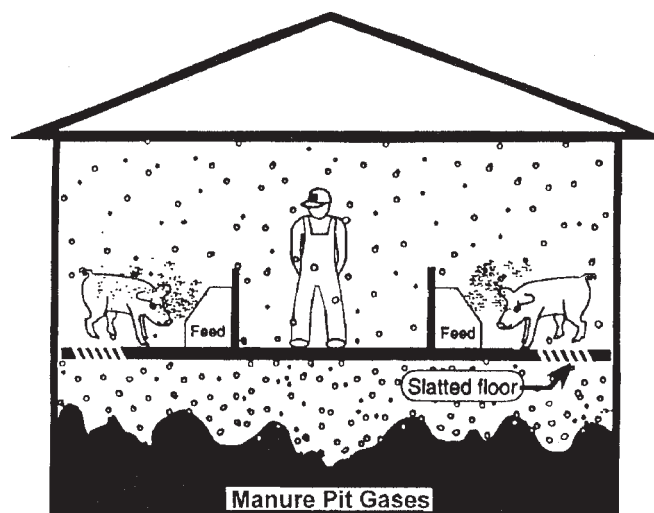
The higher the levels of harmful dust and gases and the more time that you spend in the barn, the greater the chance that you will have health problems. One way to tell if there is a problem with the air is if you have symptoms while

you are in the hog barn. You may develop one or more of the following health problems

- trouble breathing and chest tightness. This may start after working only a few weeks in hog barns and may be severe.
- headache, fever, muscle aches and chest tightness. These symptoms usually go away after 24 to 72 hours. This type of reaction is known as organic dust syndrome.
- bronchitis. This is more likely to happen if you have been exposed for a longer time.

Hydrogen sulfide and carbon monoxide are two gases in the hog barn that can replace oxygen. Your life will be in immediate danger if there is not enough oxygen.

It is best to find out if there is a problem before you have a health concern. Keep exposure to all dust and gases as low as possible.



Adapted from *Illness and Injury in Animal Confinement Workers* by S. Von Essen and K. Donham. Occupational Medicine State of the Art Reviews, Animal Handlers. 14(2): 337-350. 1999.

## Workers in hog barns report

Symptoms	Percentage of workers
irritated eye, nose and throat	50%
organic dust syndrome	34%
chronic bronchitis	25%
inflamed sinuses	25%

*Occupational Medicine: State of the Art Reviews 14(2)  
April-June 1999, Philadelphia, Hanley and Belfus, Inc.*

### DOES AIR TESTING HELP?

The air can be tested to see if the gases are below exposure limits. An exposure limit is the amount of a hazard that most workers can be exposed to without harming their health. However, you may still have breathing problems below the exposure limit because

- some workers have health problems below levels recommended for gases in the barn
- contact with more than one gas at the same time may harm the worker at levels that would be considered safe if the worker was in contact with only one gas
- there is no appropriate exposure limit for the common types of dust in hog buildings
- the interaction between combinations of dust and gases is not well understood

### DANGER CAN COME QUICKLY!

Stirring or emptying the manure pit or tank can cause a sudden release of large amounts of hydrogen sulfide. Some workers and rescuers without enough ventilation and the right

kind of respirators have become unconscious or died when they entered the manure pit. Be prepared.

Employers should hire trained professionals to do the most dangerous work such as emptying lagoons or working inside tanks or deep pits. They should make sure that the contracted firm:

- Provides its workers with appropriate respirators, personal protective equipment and emergency rescue procedures for confined spaces.
- Stir and transfer the manure in holding tanks mechanically to reduce worker contact with manure gases.
- Ensure all mechanical equipment can be removed from pits and tanks without workers having to enter the pit or tank.

Employers should also:

- Post warning signs in all areas at risk. Stand a safe distance outside the tank or building when the manure pit or tank is stirred or emptied.
- Make sure that the level of gases are safe before workers enter the hog barn again.

### WHAT CAN MY EMPLOYER DO?

Employers are legally responsible for the safety and health of all the workers. It is best to

### What can I do to protect my health?

- Be informed about health hazards in hog barns.
- Take action and bring concerns to your health and safety representative
- Follow all safety procedures.

include workers when looking into workplace hazards. This needs to be done with the health and safety committee or worker representative. A good first step is to identify the source of the problem. Employers can

- Improve ventilation and work procedures before considering respirators and protective equipment for workers.
- Provide all workers with easy to understand information and training about health hazards.
- Make sure that the mechanical ventilation system has enough capacity to effectively get rid of harmful gases at all times. Install gas detectors and test for harmful gases throughout the day in the barn.
- Make sure that workers have access to the right type of respirators that fit properly. Workers should know how to use, clean and maintain the respirators.

### If you need more information contact

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