

2020

## PRESS RELEASE

**For More Information:**

**ELLEN G. DUYSSEN**

**Central States Center for Agricultural Safety and Health**

**University of Nebraska Medical Center**

**College of Public Health, Room 3035**

**984388 Nebraska Medical Center**

**Omaha, NE 68198-4388**

**402.552.3394**

### FOR IMMEDIATE RELEASE

*By UNMC, Central States Center for Agricultural Safety and Health, Omaha, NE*

#### SAVE YOUR BREATH: USE RESPIRATORS

Since lungs transport oxygen to the bloodstream, no human can live without them.

On the farm, protecting lungs from risks such as chemicals and dust is critical to keeping lungs healthy and fully functional.

Jan Hygnstrom, with the University of Nebraska Extension Project Manager, Pesticide Safety Education Program, says farmers can incur lung damage from dusty and/or moldy hay, sawdust, welding fumes, etc. Damaged lungs can lead to many health issues.

“When lungs are damaged, they aren’t able to deliver as much oxygen as our body needs,” Hygnstrom says. “That can lead to low energy, mental confusion, chronic bronchitis, emphysema and other health concerns.”

Common respiratory hazards found on the farm include organic dust such as grain dust and hog dust, dust contaminated with mold or bacteria, gases such as ammonia and hydrogen sulfide from manure and silage fermentation, pesticides and

other agricultural chemicals, such as anhydrous ammonia.

Damage to lungs may not occur immediately when exposure occurs. Long term exposure can lead to lung scarring, asthma-like conditions, etc. Symptoms of chronic bronchitis and asthma-like conditions are observed in as many as 25% of grain handlers and swine confinement workers. Organic Dust Toxic Syndrome (ODTS) is experienced by approximately 33% of grain and swine producers, evidenced by severe influenza symptoms.

Compared to other occupations, farmers have the highest rate of disabilities from respiratory conditions even though a large majority of farmers don't smoke.

Symptoms of respiratory hazard exposure include severe shortness of breath with exertion, chronic coughing, periodic flu-like symptoms, sinus problems and nasal drainage, and chest tightness and wheezing after working in agricultural dusts.

"The most effective way to protect your lungs when you work in these environments is to use a respirator," Hygnstrom says. "One common respirator is a disposable particulate filtering respirator. These are made of a cloth-like material, which helps protect against inhaling small particles or liquid droplets."

These respirators help filter out particles that vary in size from very large and visible to the eye to extremely minute. The three main particle classifications are dust (solid particles in the air), mists (particles in liquid form), and fumes (solid matter that is burned or liquified).

These types of respirators are inexpensive and are an acceptable line of defense in many situations. However, Hygnstrom emphasizes the need to make sure the respirator is certified by NIOSH (the National Institute for Occupational Safety and Health).

"NIOSH-certified particulate filtering masks have two elastic safety straps to secure them on your face," Hygnstrom says. "A nuisance-dust mask with just one elastic strap is not NIOSH certified. It doesn't offer enough protection."

Regardless of the type of respirator used, Hygnstrom notes that it must provide a good seal against the wearer's face before it can be effective.

"Some disposable masks have a metal band across the nose bridge," she says. "This type can be more form fitted to the face. Some brands also have a clip feature that allows for pulling the mask straps tighter. Others have an exhalation valve to reduce buildup of humidity and increase comfort. These are just some of the dust mask features you should look for.

To be effective, all respirators should have:

- Two straps
- Fit the wearer's face tightly, without gaps around the nose, cheeks and chin
- Be appropriate for the task
- Be certified by NIOSH

These disposable respirators are intended to be discarded after one use. Other more effective respirators provide a higher degree of protection and are designed to be used again and again.

N-95 particulate filtering respirators are effective against:

- mold dust, grain dust and manure dust;
- dust from poultry operations;
- road or field dust;
- untreated sawdust.

The 95 means they filter out 95% of the particles down to a specific size (0.3 microns). The N means they are not resistant to oils.

Particulate filtering respirators with 99 or 100 are 99% and 99.7% effective at filtering out particles. Besides having an N in the name, these filters may have an R or a P. The R means they are resistant to oil for up to 8 hours; P means they can be used in an atmosphere with oil. Some pesticides and chemicals have oil in them, so it's important to use the correct type of particulate respirator.

Store respirators in a convenient location. Place clean, dry respirators in a tightly sealed container or plastic bag when they are not in use. Respirators should always be protected from dust, sunlight,

extreme heat and cold, moisture, chemicals and physical damage.

Hygnstrom encourages everyone who is exposed to lung hazards of any kind to take time to protect themselves to maintain lung health.

“It takes only a few minutes to put the respirator on,” she says. “Daily exposure to low level dust or fumes can be just as dangerous as occasional exposure to high concentrations of these elements.”

***Funding for this educational article comes from the Central States Center for Agricultural Safety and Health and the University of Nebraska Medical Center.***