

2020

## PRESS RELEASE

**For More Information:**

**ELLEN G. DUYSEN**

**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*

#### OVERWHELM THE PESTS – NOT YOUR LUNGS

Spills and splashes of pesticide during application preparation or during cleanup of spraying equipment may seem insignificant.

However, because farmers are routinely exposed to higher levels of pesticides than the average consumer, it's critical to know the steps to take to help prevent exposure. Pesticides that are highly toxic to humans increase the risk of serious accidental poisoning.

Symptoms of pesticide exposure may include minor skin irritation or other allergic-type reactions. More severe symptoms may include strong headache, dizziness or nausea. Some pesticides can cause convulsions, coma and possibly death.

"Always follow the requirements for Personal Protective Equipment (PPE) listed on the product label," Jan Hygnstrom, University of Nebraska Extension, Pesticide Safety Education Program, says. "That information is for your safety and is also a legal requirement for using a pesticide.

Respirators are required when a pesticide can be harmful if inhaled.”

Examples of risk for inhaling pesticide include when mixing pesticide products or from drift during application. A product label lists the minimum type of respiratory protection required when using it. However, users may use a respirator that provides a higher degree of protection.

In selecting the appropriate respirator, review the respirator label to ensure it has been certified by NIOSH (National Institute of Occupational Safety and Health) to meet the standards required for use with the pesticide.

“Two main respirator categories are air-purifying and atmosphere-supplying,” Hygnstrom says. “Air-purifying respirators are more commonly used in handling pesticides. They filter the surrounding air by using filters to protect against particulates, or cartridges and canisters to protect against gases. Atmosphere supplying respirators have a tank or line that supplies clean air, and may be required for fumigation activities.”

NIOSH-certified respirators have been significantly tested to ensure their effectiveness when used according to directions.

“The one-strap dust masks are not considered to be respirators,” Hygnstrom says. “Typically, one size fits all but usually doesn’t fit very well. Air can easily penetrate under the sides of the mask. They are not approved for use with pesticides.”

To ensure selection of the appropriate respirator, consult your local Extension Office to identify someone who is trained to assist in selection, use and maintenance of the respirator.

“Anyone using a respirator should have a medical evaluation and a fit test to determine if they would be at risk while using a respirator,” Hygnstrom says. “There is a requirement if the label requires use of a respirator. The medical evaluation is especially important if someone has a medical condition such as asthma, high blood pressure, or a history of lung problems. The fit test ensures the respirator is properly sized and shaped to prevent pesticide exposure.”

Following a fit test, respirator users are trained on:

- Why a respirator is necessary.
- How to properly fit, use and use it.
- The limitations and capabilities of the respirator.
- How to use the respirator in emergency situations.
- How to inspect, put on, check seals, and use and remove the respirator.
- Procedures for maintenance and storage.
- Medical signs and symptoms that may limit or prevent effective use of the respirator.

Seal checks help determine whether the respirator facepiece is properly positioned to protect the user from inhalation exposure. It's possible that between removal, cleaning and storage the respirator may change shape and not fit the same. In addition, someone may put the respirator on incorrectly when in a hurry.

A good practice is to check the seal every time the respirator is used. Two common ways to check the seal are either a positive seal or negative seal check.

A positive seal check involves covering the respirator exhalation valve and gently exhaling. If there's no rush of air around the faceplate, the seal is okay.

To complete a negative seal test, cover the inlet opening of each of the respirator cartridges and inhale gently until the facepiece collapses. Hold your breath for about 10 seconds; if the facepiece remains collapsed, the seal is effective.

In either seal test, if air leaks around the facepiece, reposition it and repeat the check until you have a good seal.

"Facial hair, like beards and sideburns, interferes with the seal," Hygnstrom says.

Respirators are not meant to be shared with others. After each use, the reusable respirator should be cleaned and properly stored. Disposable respirators should be properly discarded.

Maintenance and storage information is included with the respirator and should be carefully observed.

The service life of a respirator is affected by elements such as:

- Temperature
- Humidity
- Work of the user
- Chemical concentration
- Types of chemicals to which the respirator is exposed
- Extensive exposure to organic vapors over a short period of time

Many respirator manufacturers offer an online calculator to help determine the service life of their respirator products. To help ensure your respirator remains effective, document the date of use and track the amount of time the respirator cartridges and particulate filters have been used. A sample log is available at the University of Nebraska's Safe Operating Procedure "Respiratory Protection – Air Purifying Respirators Cartridge Change Schedule" at [http://ehs.unl.edu/sop/RPP\\_SOP\\_Cartridge\\_Change\\_Log.pdf](http://ehs.unl.edu/sop/RPP_SOP_Cartridge_Change_Log.pdf).

When using a respirator that filters out dusts and mists, change the disposable particulate filter mask or filter on a reusable respirator when breathing becomes difficult, or if the filter is torn, damaged, or wet.

"You should move to a safe area and immediately replace chemical cartridges or canisters if you can smell pesticide odors when using the respirator," Hygnstrom says. "If no time limit is given by the manufacturer, replace the filter or cartridge after it has had eight hours of use, even if you can't smell or taste pesticide odors and the filter seems in good condition."

If there is any question about when a filter, or cartridge was last used, or if the total hours of use have not been recorded, replace it.

“When in doubt, replace,” Hygnstrom says. “Start and maintain a log for the new filters or cartridges.”

Hygnstrom advises that anyone working with pesticides carefully reads the product label to understand what type of respiratory protection is required for the product.

“Make sure the respirator you select is NIOSH certified,” she says. “Complete a medical evaluation and observe the manufacturer’s instructions for use and care.”

Respirator filters and cartridges must be designed for the type of contaminant risk. Before every use, the respirator should be inspected to ensure it hasn’t been damaged and a seal check should be conducted.

“Your well-being depends on healthy lungs,” Hygnstrom says. “Those extra minutes spent protecting them from risks such as dust, welding fumes and chemicals may add years to your life.”

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