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## PRESS RELEASE

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### FOR IMMEDIATE RELEASE

#### **Breathing Easy**

*When smoke is in the air, just a few simple steps can help protect lungs and overall health.*

Fire can be a valuable tool on the farm, boosting pasture production, enhancing native plant communities and improving wildlife habitat. Planned fires are also used to manage forest areas.

While many precautions are typically in place during planned and prescribed burns, protecting your lungs from smoky air may be overlooked. Regardless of how fire is started, smoke is made up of a number of components. The most dangerous are small particles (particulates) created when less than 100% of the material on fire is burned. These small particles make it harder for anyone to breathe and can be especially harmful to young children, the elderly and individuals with conditions such as asthma, chronic bronchitis, emphysema and congestive heart failure.

“Smoke from wild fires can drift for miles, lowering air quality across a broad area,” Dr. Debra Romberger, pulmonologist and Outreach Director at Omaha, NE, Central States Center for Agricultural Safety and Health (CS-CASH), says. “The importance of knowing how to respond to smoke that significantly impacts air quality really came home to me during the 2016 Canadian wild fires. Smoke in this area came on suddenly and was so heavy you could smell it as well as see it.”

The process of burning – regardless of the material burned – releases chemicals into the air. In 100% combustion, when all material is consumed, fire produces water and carbon dioxide. If combustion is incomplete, smoke occurs and can be composed of hundreds of different chemicals and fumes. Visible smoke is primarily carbon (soot), tar, oils and ash.

In large cities, air quality warnings are issued when smoke from events such as the Canadian wildfires drifts into the area. Residents of rural areas aren't likely to receive an air quality alert and may not realize how drastically air quality declines when smoke is heavy enough to cause haze and a smoky odor.

"If you already have breathing issues, you shouldn't go outside if you're able to see and smell smoke," Romberger says. "If your livelihood depends on being active out of doors, you should at the very least wear a particulate filtering face piece such as an N95 mask. It's the same kind of protection used to work in a dusty environment."

Romberger points out that smoke from prescribed burns, wildfires or any type of fire pose the same kind of toxic risk found in cigarette smoking. A common perception is that nicotine poses the biggest threat to smokers. In reality, the toxic chemicals produced by burning tobacco are much more damaging.

"The carcinogens released by burning tobacco in cigarettes are also released when wood, grass and other materials are burned," Romberger says. "Firefighters are well aware of the chemicals released in fires. The more intense the smoke is, the more potential there is to cause lung irritation."

Romberger explains that the same type of cells found in the human nose are also found in the lungs. Elements that irritate the nose can result in a runny nose. Those same elements are likely to affect the lungs in the same manner.

"When cells in the lungs are irritated, it causes the individual to cough," Romberger says.

The 9/11 tragedy, which affected hundreds of firefighters who had documented lung function data prior to the event, allowed researchers to closely examine the effect toxic smoke has on lung health. Although lung disease has taken years to develop for some of the firefighters in the study, effects of the explosions have often resulted in chronic obstructive pulmonary disease (COPD).

"COPD typically takes years to develop," Romberger says. "The true effects of smoke exposure may not be detectable for a long time. Regular exposure to smoke will significantly increase potential for lung disease."

Video assistance for selecting the most effective mask for agricultural activities like prescribed burns is available by searching YouTube – key words: Choosing the Right

Mask for Your Agricultural Job. Masks worn in smoky or other unsafe conditions should be properly fitted (search YouTube for video instructions) and washed after each use.

Random, occasional exposure to smoke isn't likely to pose significant health issues. However, for individuals implementing controlled burns or often being in situations where smoke is present should be thinking about how to protect their lungs.

"Most people believe COPD is primarily caused by tobacco smoking," Romberger says. "The truth is, up to 20% of COPD is caused by occupational hazards that include dust, vapors and gases. Researchers are finding that people in countries where biomass is regularly used to cook inside small huts or homes develop COPD. It's impacting high numbers of women and children, and the chemicals produced by the fire is the source. There's a move to improve cook stoves so people in those types of situations can vent the smoke their fire creates.

"With the number of wildfires that have resulted in smoke drift in recent years, it's important that rural residents are aware of the need to protect their health when smoke occurs," Romberger adds. "Typically, air quality in rural areas is very good. If it isn't, there are measures that can be taken to reduce the effect of pollution from elements like dust and smoke."

Additional information about respiratory protection in agricultural settings is available at <http://nasdonline.org>.