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Guest Viewpoint

### **Medical studies make case to ban field burning**

By Bob Carolan

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The grass seed burning season is now in full swing in Western Oregon. By law, great efforts are made to protect the health of the residents of the metropolitan areas of Eugene, Springfield, Albany and Corvallis by diverting the smoke elsewhere. Consequently, the brunt of the pollution and its health effects are felt in the rural areas, especially by the more than 50,000 residents on the eastern portions of Lane, Linn, Clackamas and Marion counties.

It is important to consider the accumulated medical data on smoke and air pollution, especially the fine particulates found in air pollution, because field burning smoke is loaded with these particulates. The findings are alarming and indicate that bad air quality is much more damaging than we had ever suspected.

Recall that cigarette smoking originally was thought to be benign until data accumulated in the 1950s and 1960s. It wasn't until the 1980s that secondhand smoke was found to be as harmful as it is. Now, ordinary particulates from many sources such as field burning have been shown to have significant, serious health effects.

Physicians intuitively have known that smoke exposure can aggravate airway diseases such as asthma and emphysema. In 1996, a 37-year-old mother of two in Idaho died in two hours from an asthma attack caused by field burning smoke. It happened again in Idaho in 2000 to a 40-year-old woman. New data also show that fine particulate matter in outdoor smoke causes permanent lung damage (New England Journal of Medicine, December 2007). The study found that small children especially are susceptible to this damage.

More recently, the harmful effects of fine particulates on arterial disease have been discovered. Data summarized in the European Respiratory Journal in 2007 cite a number of studies in the United States and Europe that correlate fine particulates with increased myocardial infarction (heart attacks), strokes, heart failure, arrhythmias and sudden death. Cigarette smoking causes all of these diseases. It had been thought that nicotine and carbon monoxide were the offending agents. Now it appears that fine particulates could be the bigger problem.

Circulation, a journal of the American Heart Association, summarized its findings on the serious effects of air pollution in 2004. The Journal of the American Medical Association reported in 2006 that brief smoke intrusions, such as occur with field burning, increase hospital admissions, cardiac disease, heart failure and respiratory compromise. These problems occurred during the periods when air particulates exceeded Environmental Protection Agency standards.

One of the most serious consequences of air pollution, documented in the August issue of Scientific American, described the city of Tongliang, China, where a power plant was a major source of pollution. The plant closed in 2002. Children conceived and born there before the plant was closed have smaller head sizes and suffered poorer mental development than children conceived and born after the closure. Bad air pollution can affect even unborn babies.

Proponents of field burning buy the grass seed industry's claim that burning is necessary for them to survive economically. The facts are the opposite. In the 1980s, farmers burned more than 250,000 acres. Now, they are allowed to burn 50,000 acres and yet grass seed harvesting and acres planted have flourished.

The majority of growers do not burn their fields each year; it is only a small minority who continue this practice. The state of Washington completely banned field burning in 1998, and grass seed production actually has increased in that state despite the ban.

The medical research is compelling. We now know that fine particulate matter can cause permanent lung damage, especially in young children. We also know that fine particulate matter is associated with increased heart attacks, strokes, heart failure, arrhythmias and sudden death.

It is time for Oregon to ban field burning. It is a harmful and dangerous practice that benefits only a few at great expense to many.

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Dr. Bob Carolan has been a pulmonologist since 1979 with the Oregon Lung Specialists in Eugene.

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