

Good Mask Fit Essential in Swine Production

It seems common knowledge that workers in swine confinement barns might be at risk regarding their respiratory health. They are exposed to high levels of dusts and gases on a daily basis in their work environment. The consequences of this exposure can affect their lung function leading to respiratory symptoms, reductions in expired flow rates, and increases in airways responsiveness.



A group of researchers from Saskatchewan and Quebec have combined their effort and expertise in a project aiming at evaluating the protective effects of wearing a respiratory mask while working in hog barns. For this study, 21 healthy (no asthma or allergies) males, never previously exposed to swine barns, were recruited. The protective respiratory mask used was an N-95 disposable particulate respirator with two straps and a metal nose clip. A well fit mask being an issue for optimum protection, a fit test was performed to assess the particle levels inside and outside the respirator.

“A properly fitted mask is everything in respiratory protection” explained Dr. James Dosman, director of the study. “We carried out the study in January when the dust levels were highest, and made sure the mask was properly fitted around the nose and mouth.” Dr. Dosman says that when the mask was properly fitted by carefully adjusting the metal nose piece, effects on the lungs declined by up to ninety percent.

This study shows that wearing a mask decreased the cough, chest tightness, and phlegm. Furthermore, the most impressive finding consisted in, a slight or no change in pulmonary function for men wearing the mask but a ten percent decrease in lung function in men not wearing the mask.

The researchers concluded that the protective effects of the mask tested in the study are similar to those obtained in a previous study where sprinkling canola oil was used as a measure to control the environment in swine facilities.

What have we learnt from this study?

That simple, affordable and practical technologies can make a difference in promoting better practices toward improved health and safety for swine confinement workers in Canada.

For more detailed information:

Dosman JA, Senthilselvan A, Kirychuk SP, Lemay S, Barber EM, Willson P, Cormier Y and Hurst TS. Positive Human Health Effects of Wearing a Respirator in a Swine Barn. *Chest* 2000; 118(3):852-860.

Senthilselvan A, Zhang Y, Dosman JA, et al. Positive human health effects of dust suppression with canola oil in swine barns. *Am J Respir Crit Care Med* 1997; 156:410-417.