



## Air quality in Canadian hog buildings: reduction of airborne dust, gas and human pathogens in buildings and their environmental dispersion.

### Background

Thousands of Canadian workers in the pork industry are exposed to odorous compounds, gases, and bioaerosols which include alive or dead bacteria and microbial fragments. This exposure comes from a variety of sources such as feed, litter, building materials, animals and manure.

Exposure to the air in hog barns could cause infectious diseases in the workers as well as adverse respiratory problems such as decreased lung function, wheezing, chronic bronchitis, and asthma. These problems are related to the number of working hours spent working inside the hog barn. Hog producers, their families, workers and rural communities in the area are also all at risk from the contaminants in the exhaust air being emitted from the buildings.

Although many studies have been done and the results applied with success to reducing the amount of contaminants in the air of the barns, there is much more that can be done to improve air quality.

The air quality in Canadian pig buildings project proposes to fill important research gaps found in the literature review such as the lack of information available on the presence of human pathogens, and metal/antibiotic resistant genes. It will also look at the result of reducing bioaerosols such as bacteria, endotoxins and human pathogens in an effort to make hog buildings a safer place to work.

The *Air quality in Canadian pig buildings* project, is one of two projects in the Animal Housing Environment priority area, under Agrivita Canada Inc.'s Canadian AgriSafety Applied Research Program, lead by a national team of researchers from the Institut de recherche et de développement en agroenvironnement (IRDA), and Centre de recherche de l'Institut universitaire de cardiologie et de pneumologie de Québec at the Université Laval (CRIUCPQ), University of British Columbia, the Canadian Centre for Health and Safety in Agriculture (CCHSA) and the Canadian Agricultural Safety Association (CASA).

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