



Bio-exclusion and bio-containment strategies to control epidemics resulting from airborne viral and bacterial transmission

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This project is to evaluate the effect of different bio-exclusion and bio-containment strategies on the amount and transmission of airborne viral (Porcine reproductive and respiratory syndrome virus [PRRSv], Influenza virus) and bacterial (*Streptococcus suis* serotype 2) pathogens.

Summary

The PRRS and Influenza viruses and *Streptococcus suis* are associated with elevated morbidity and mortality, reduced performance and increased cost of medication and vaccination in animals, adding to producers' overall financial burden. A Canadian pig producer loses between \$250 and \$460 per sow per year from chronic PRRS and associated acute infection (Mussel, 2010).

To lessen economic losses, this project aims to find ways to combat the penetration of pathogenic agents into swine buildings (laboratory set up). Using a wind tunnel, researchers will evaluate the capture efficiency of various pre-filter and filter combinations for Influenza, PRRSv and virulent *Streptococcus suis* serotype 2 models.

The viral (phage Phi6) and bacterial (*Streptococcus* sp.) models to be used to mimic animal pathogens are not harmful to animals or humans.

Researchers will conduct a literature review in order to select the pre-filters and filters studied, and the atomization and air sampling methods.

Collaborators

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