

The Solarwall

The Centre de développement du porc du Québec (CDPQ) has evaluated the technical and economic efficiency of the Solarwall to preheat the air in a hog raising facility. The Solarwall turns out to be an interesting method because Quebec winters are very sunny, despite the cold.

The Solarwall has allowed propane savings ranging from 20% to 30%, thus resulting, in addition to a reduction in heating costs, in a reduction of CO₂ emissions (one of the leading greenhouse gases). The system's break-even point varies depending on the size of the hog barn.

This device adapted by the Enerconcept company reheats the outdoor air which penetrates between the Solarwall and the hog barn wall. The hot air then serves to ventilate the building. A propane auxiliary heating system is used to adjust the air temperature, especially during very cold days or days with little sunlight.

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The Polymair® heat recovery air exchanger

To mitigate heating problems in hog production, the Centre québécois d'expertise en production porcine (CQEPP), in collaboration with the Institut de recherche et de développement en agroenvironnement (IRDA), has tested the Polymair® heat recovery air exchanger.

In bedded hog production systems, the Polymair® helped obtain an optimum production environment during the winter, by adequately controlling the

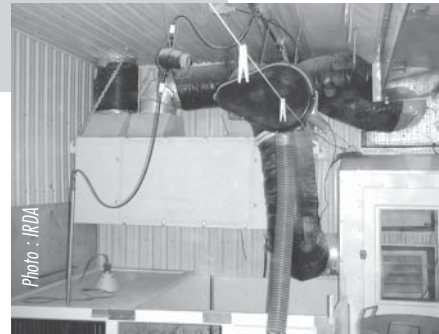
COLUMN

Heating of hog farm buildings

With Quebec's cold winters, hog producers have to heat their buildings.

Through its programs, the CDAQ provides financial assistance for development of alternatives to propane, which is currently the principal energy source used in hog production.

The Polymair®
 heat recovery air
 exchanger in a
 hog nursery.



The heat recovery air exchanger was also tested in nurseries. The initial results indicate that these establishments only need an air flow of 1.5 l/s per pig. The Polymair® models tested for the project have three times this capacity. The development of equipment based on the same technology as the Polymair® models that allow low air flow exchanges would offer a better return on investment.

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relative humidity level in the air, significantly improving the building's ambience while reducing bedding maintenance costs. A hog farmer who wishes to benefit from this production environment, with a conventional ventilation system, would have to pay high heating costs. This system has cut heating costs by over 70%. These savings offset the purchase and installation costs of the Polymair® after only five years of use.

Heat recovery air exchangers are an interesting solution to reduce heating costs, but those currently available on the market are not designed to withstand the dusty and corrosive bedded hog production environment. The Polymair® was developed by the IRDA for the purpose of withstanding difficult greenhouse conditions and also shows good resistance to the difficult environment of bedded hog production systems. In fact, during tests performed at the CQEPP, the installations were still perfectly functional after three months, even without having been cleaned or defrosted.

We invite you to contact us for any question or comment on this column or the activities of the CDAQ

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The CDAQ manages the funds allocated for agricultural production in Quebec by Agriculture and Agri-Food Canada under the Advancing Canadian Agriculture and Agri-Food (ACAAF) Program. The ACAA Program took over the Canadian Adaptation and Rural Development (CARD) Fund.



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