



Effectively Reducing Odours

What would happen if we could reduce odours from hog operations? As we all know odours associated with livestock facilities can be a contentious issue, a reduction in odours would improve the acceptability of swine facilities in rural areas by reducing their potential environmental impacts.

The main objective of a study funded through the Canadian Swine Research and Development Cluster, and lead by researchers at the Research and Development Institute for the Agri-Environment and the Prairie Swine Centre, was to develop an air cleaning technology that will effectively reduce the offensiveness of the exhaust air from a swine finishing facilities.

The result was the development of a **bio-trickling air treatment unit (ATU)**. Biotrickling filters are considered to be the next development for animal housing since they are easier to manage and are smaller in size compared to other exhaust air filtration technologies. Various configurations of biotrickling filters and bioscrubbers have been studied and showed a very good potential for controlling emissions from swine facilities.

One of the over-riding principles of the project was to develop a commercial scale ATU that had 1) low capital and operating costs, 2) adaptable and easy to maintain. For example all many of the the internal components of the ATU would be available at your local hardware store and sea containers were utilized as the building for the bio-trickling air treatment unit.

How Does it Work?

Each ATU consists of two vertical walls of plastic porous material with a sprinkler system supplying water to the top of the wall; as water trickles down the wall, the exhaust air is passed across the wall. Water is continuously recirculated over the wall, resulting in a biofilm forming on the surfaces of the porous wall material, and the combined action of the microorganisms in the biofilm and the wetted filter media results in the cleaning of the exhaust air that passed through the wall. Water usage for each ATU averaged 538L/day, as the ATU was more effective water usage also increased.

Is it Effective?

The biotrickling air treatment units (installed at the exhaust of swine grow-finish rooms) effectively reduced ammonia, dust and odour levels by 77%, 92% and 75%, respectively. The bio-trickling air treatment unit shows great promise in alleviating one of the long-standing challenges the pork industry faces, reducing odours and emissions from hog facilities.

Reduction of Odour and Gas Emissions from Swine Buildings

<http://www.prairieswine.com/pdf/1272.pdf>

Odour Overview

<http://www.prairieswine.com/odor-overview/>

10 Steps to Manage Odour

<http://www.prairieswine.com/10-steps-to-manage-odor/>

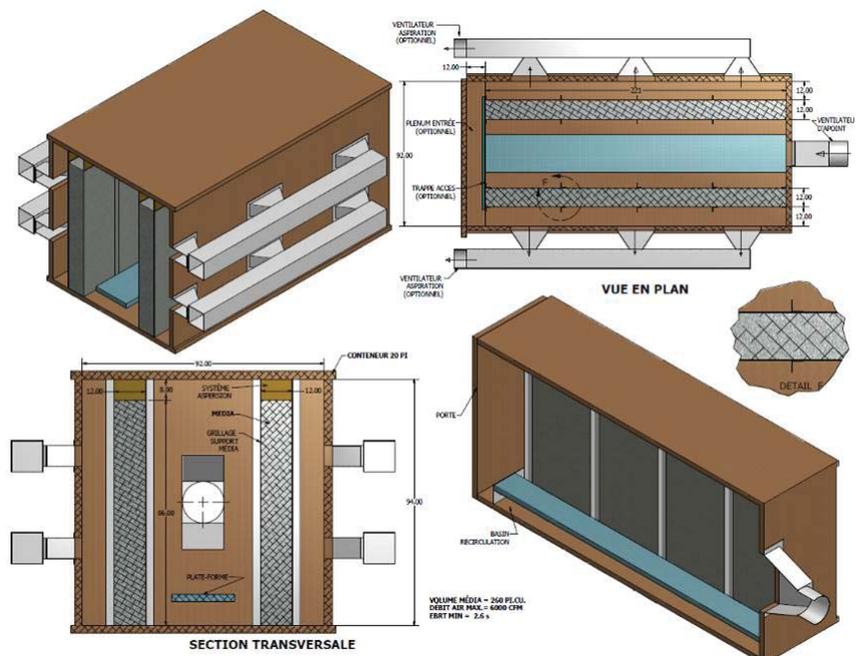


Figure 1. Conceptual diagram of the interior of each air treatment unit