



Swine Innovation Porc

Conestoga a Big Fan of Pig Cooling System

By Geoff Geddes, for Swine Innovation Porc

Humans may complain that the hot weather makes them sweat like a pig, but there's one small problem with that: pigs don't sweat. Their lack of functional sweat glands can be dangerous or even fatal during transport, and it prompted a study on the impact of ventilation in warm weather for pigs prior to unloading at the plant. Today, the product of that study is earning rave reviews from an industry seeking solutions.

"The novel part of this study was adding water misting to the existing fan bank system," said Dr. Luigi Faucitano, Researcher at Agriculture and Agri-Food Canada. "We then as-

sessed pig comfort based on body temperature monitors, internal truck climate conditions and behavior during the wait before unloading, at unloading and in lairage."

The results showed a drop in temperature and humidity in the trailer receiving ventilation and misting, less need to release excessive body heat and reduced dehydration at slaughter in the animals.

Those are some major selling points, so it's little wonder that the second largest pork producer in Ontario decided to buy in.



*Fan banks installed at Conestoga Meats in Breslau, Ontario.
Photos courtesy of Conestoga Meats*



Leaders of the fan club

“We installed the fan banks in 2013 as part of Luigi’s project and later added misters to aid in the research,” said Colleen Roehrig, Manager - Producer Services and Animal Welfare for Conestoga Meats in Breslau, Ontario.

After seeing improvements in pig comfort and body temperature, Conestoga Meats chose to adopt the fan bank/mister system for all of its animals.

“We were happy with how well the pigs were coming off the trailers and how the system was keeping them cool,” said Roehrig. “You get some pretty steamy summer days in this region, but any time it’s over 20°C we fire up the fans and misters to ensure animal comfort.”

Given the realities of the pork business, proper cooling methods are essential. Trailers require movement to provide air flow for the animals, leading to problems when a transport is sitting still waiting to unload.

“Research has demonstrated that a stationary trailer with no prevailing wind gains at least 5°C just from the pigs’ body heat. Since pigs don’t sweat, they can overheat quickly, leading to heat stress, heart attacks or sudden death. Without that heat to contend with, we’re able to save time as the animals are easier to unload. We can tell that they are less stressed as they settle in faster, lie down and rest soon after arrival, which is great to see.”

There can also be implications for meat quality when pigs are stressed, yet another reason that cooler is better.

As of July 2019, Conestoga Meats has three fan banks in total consisting of 9-12 fans each. They run almost continuously from May to the end of September, impacting at least half of the 40 loads received at the plant every day. Each bank was in the range of \$20-30,000 to build, along with plumbing installation cost and ongoing hydro bills. Even in a business where margins are thin, this purchase was a no-brainer for the company.

A cool investment

“The cost is pretty minimal compared to the improvements we derive from the system. We’re not losing animals on trailers as they arrive, and drivers save on fuel costs by not having to drive around and keep pigs cool, so the benefits far outweigh the expense.”

Not surprisingly, Roehrig is quick to recommend the cooling system to other plants, and she also advises it for producers who load multiple trailers at a time or have slow loading hogs.

“It often takes 30 minutes or more to load a trailer, so the pigs that are already in there and waiting for others to join them can easily overheat. If you don’t get any good prevailing winds by your loading chutes that can keep the pigs cool, you may well benefit from this approach.”

Though the fan/mister combination is a powerful one, it’s important to use them properly.

“The mister is something you want to use in pulse rotation. Rather than leaving it on continuously, run the mister for 10 minutes at a time and then turn it off; otherwise, you build

up too much humidity in the trailers. Our fans are always running, so it is just the misters that pulse on and off, and it works like a charm.”

Based on the results so far, Conestoga Meats has made large-scale renovations that include a lairage area with its own dedicated fan bank for waiting animals.

Apart from the tangible results, the company is pleased with feedback from drivers and customers.

“The drivers are really pleased with the system because they know it’s helping the pigs. If one fan in one bank has an issue, a driver

will tell us right away. We’ve also had positive comments from customers when they tour the plant and we promote the technology on our website. It’s good for our animals, which means it’s good for our product, so everyone wins.”

While the most important opinions would be those of the pigs, they can’t express them...or can they?

“When the fans and misters are on, you can sometimes see the pigs’ mouths up and taking in the mist. They can’t smile, but if they could, they would.” 😊

Learn more....

The work described in this article was part of a Swine Cluster 2 project (2013-2018) titled *Monitoring the effects of transport on the behaviour, physiology, carcass and meat quality of pigs through the study of truck micro-climate, vibrations and cooling systems*.

For more details about the project, visit our website at www.swineinnovationporc.ca. You may also contact Dr. Luigi Faucitano at luigi.faucitano@canada.ca.

Additional information...

The work completed in the Swine Cluster 2 project built on outcomes from a previous study initiated by Ontario Pork in 2011-2012 titled *Truck Cooling of Hogs*. This study involved collaboration between Ontario Pork, OMAFRA, Conestoga Meats and Quality Meat Packers, and this project was supported in part through Growing Forward 2.

More details about this initial study may be found in this article on AgInnovation Ontario’s website: [Fans keep pigs cool in stationary livestock trucks](#).

The work presented in this article was part of Swine Innovation Porc’s Swine Cluster 2: Driving Results Through Innovation research program. Funding was provided by Agriculture and Agri-Food Canada’s AgriInnovation Program, provincial producer organizations and industry partners.