

EFFECTIVE VENTILATION

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This paper will describe our practical experiences with heat recovery systems and solar wall installations in all stages of swine barns.

NURSERY ROOMS

We have experienced dramatic differences in air quality and humidity levels in nursery rooms that have added heat exchangers. It has been a combination of heat recovery which is allowing the producer to raise the minimum ventilation rate higher than he had been doing, and the other benefit on minimum ventilation has been the powered air inlet on the heat exchanger which has been delivering the incoming fresh air at the proper air speed and at a continuous level. This proper air speed in a lot of cases was not being obtained before either because of improper minimum inlet settings on the ceiling inlets or just not being able to establish enough static pressure to bring the air in at the right speed. We did do some trials and found it necessary to power the fresh air into the rooms via a fresh air duct or poly air tube that complimented the pattern of the existing ceiling inlets. We did not obtain satisfactory results in nursery barns with just a diffuser on the heat exchanger and no duct system for the fresh incoming air. In most cases we were exhausting from the pit but it did not make a great difference if we pulled the exhaust air directly from the room. All the nursery rooms still required supplemental heat but the amount was reduced.

GROWER FINISHER ROOMS

History has shown that producers are always tempted to cut back on heating costs in these rooms. They will use the timer function on the ventilation controller, or just slow down the ventilation rate so the heaters do not come on. This always leads to higher humidity levels and higher amounts of ammonia gases, and the pigs are under stress.

We have found by installing a heat exchanger that is sized to provide the minimum ventilation requirement for both continuous and humidity we can provide excellent air quality and comfort level and not require any supplemental heat after the first two or three days of filling the room. Many producers are now getting along with just one portable heater that they move from room to room. This has saved them a lot of time on heater maintenance. We have experienced our best results if we have ducted the fresh air into the room complimenting the air pattern of the existing inlets. If the room was an auto-sorter layout and pigs were free to move around the room, then we were able to use only a diffuser as our fresh air inlet.

FARROWING ROOMS

The only farrowing rooms that we installed heat exchangers in were for organic producers that took the sow out of the farrowing pen at weaning and left the piglets in the pen. We had the same results here as we did in any nursery room. In conventional farrowing rooms heat exchangers can work well but I feel that solar walls may be all that is required to effectively raise the ventilation rate to where you will have excellent air quality.

GESTATION AND BREEDING ROOMS

These rooms do need supplemental heat when the outside temperature dips below -10°C if you wish to provide proper ventilation rates and good humidity levels. The addition of a heat recovery system in these rooms has eliminated the need for a supplemental heater, and has provided a warm dry environment for the sows. The producers that have installed these units in existing barns notice that they can obtain much higher ventilation rates which is giving them fresher air and increased comfort levels for the sows and the staff working in these rooms. If the gestation room was an individual stall layout we have always used a duct system or poly tube to distribute the fresh incoming air. If the room was loose housing then we were able to get by with a diffuser for fresh air delivery.

SOLAR WALL IN SWINE BARN

We are just getting started installing a solar wall in swine barns. In all phases of swine barns including farrowing rooms and gestation rooms it is going to help raise the minimum ventilation rate which improves air quality and promotes a drier room and it will do this without any additional costs. We see this product as a tool that will help any ventilation system work better, and it will give the producer a definite benefit. At the present time there is both a Federal and a Provincial grant in place that will help pay for this investment.

NEW PRODUCT COMING

Noveko Air Filters

I would like to mention a new product that we are handling to improve animal health. This product is being used by the A.I. units in some parts of Ontario - it is the Noveko Antimicrobial Air Filter. It is specifically designed for livestock operations. The Noveko filter cleans the outside air of bacteria, viruses, and dust that might affect the health of your animals. It is one more way of protecting your operation from disease outbreaks.