Pig Barns, Energy Efficiency, the *Kyoto Protocol* and *Your Bottom Line*

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If asked to recall the significance of February 16th, 2005, many of you will cite the official cancellation date for the 2004-05 NHL season. However, if you were able to struggle through the rest of the evening news, you will also be aware that the Kyoto Protocol became internationally legally binding on the very same day.

A lot of the Kyoto discussion has so far focussed on renewable energy technologies: wind, water and biomass energy production. Parallel to the renewable energy movement, a quieter push towards energy conservation is also emerging. This should be of particular interest to Canadian pork producers.

Swine operations have likely become accustomed to the ever increasing February heat and hydro bills. Knowing the burden that energy expenditures can have on your bottom line, it might be worthwhile to consider a closer look at what those bills represent, and how you might be able to claw back some of those dollars by making your operation more energy efficient.

The main energy consumers on farms are heating, including creep heat, lighting and ventilation systems.

Each on-farm energy consumption point has opportunities for improved operating efficiency, and small changes can result in decreased barn operating costs.

1. Heating Systems

Creep heat is a major consumer of energy in farrowing units. Full-time heat lamps can be managed more effectively by installing dimmers and diode switches (1/2 power). These simple changes can save you roughly 30 per cent per year on creep heat energy costs. Installing high temperature cut-out thermostats to turn off creep heat on hot summer days can save another five per cent and makes sows more comfortable. Converting to electric or hot water heat pads can save another 50 per cent or more on energy expenditures in the creep.

Heating systems in all barns should be properly sized, located and most importantly, controlled so that the barn does not overheat. Overheating results in the exhaust fan system venting precious heat out of the barn, and a loss of cash from your pocket.

2. Lighting Systems

Barn lighting systems should be fluorescent unless lights are used for less than two hours per day. Compact fluorescents are a good first step, but 4-ft. tube fluorescents in vapour proof fixtures provide long life, low cost and excellent lighting. Expect to reduce energy use by 60-80 per cent compared to incandescent systems. In high ceiling barns, high intensity discharge (HID) such as metal halide and high pressure sodium light systems offer additional energy savings over fluorescent along with lower maintenance costs.

3. Ventilation Systems

Ventilation systems require careful evaluation when searching for energy efficiency options. Buying fans based solely on the diameter is dangerous. For example, 24-in. fans range in total capacity from as low as 4500 to over 8000 CFM (cubic feet of air per minute exhausted). Efficiencies vary from as low as seven to as high as 20 CFM per watt of energy consumed.

Breeding, gestation and finisher barns may find substantial savings in installing dual ventilation systems, using fans during cold weather and converting to natural ventilation for warm weather periods. In the dual ventilation scenario, operating savings are in the 80 per cent range and the barn environment condition is maintained or improved over conventional fan-based systems.

Putting it all together

Living and farming in Canada, where it is often cold and dark, requires us to spend significant cash on heat and lighting. We have little choice on this. We do however, have choices on how we go about expending energy. The heating, lighting and ventilation tips discussed could see you achieve energy efficiency gains ranging from five to 80 per cent. An 80 per cent reduction in energy use for your barn ventilation system will do the following two things: lessen greenhouse gas emissions by reducing the amount of fossil fuel used to run the system, and reduce your expenditures on ventilation by 80 per cent. You can choose which one you want to get behind.

For more information on Greenhouse Gas Mitigation Program activities, contact Cedric MacLeod at the Canadian Pork Council, 613-236-0011 or macleod@cpc-ccp.com

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