

# HOG-UPDATE

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## **Economic Impact of Intervention Strategies during a PRRSv Outbreak**

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The winter months have been shown to be the greatest at risk period for a Porcine Reproductive and Respiratory Syndrome outbreak. With temperature fluctuations and ventilation adjustments in the barn, the concentration of pathogens can increase 20 times in the cold weather when air flow is reduced.

The PRRS virus is particularly transmissible in cold damp environments and can survive long periods at temperatures below freezing. Dry warm conditions are not conducive to the survival of the PRRS virus. The virus can cause reproductive problems in the sow herd and severe respiratory disease in the nursery and ultimately the grow/finish barns. Not all strains of PRRSv are spread easily via aerosol transmission hence good biosecurity practices in particular Danish Entry System is your best defense. Other strains of the PRRSv are transmitted through physical vectors like animals or boots and clothing.

The economic impact of a PRRSv outbreak can be significant and different intervention strategies can dictate the economic severity. A cost benefit study has

been conducted by Dr. Zvonimir Poljack of the University of Guelph in conjunction with OSHAB and is still ongoing. Dr. Doug MacDougald presented the findings at OPIC's Big Bug Day VII held in Stratford on December 2, 2009. They looked at the cost of doing nothing during an outbreak versus the cost of inoculating the herd and/or the use of the drug Pulmotil.

The most expensive option is to do nothing and wait for the herd to develop stability. This process can take several months and proves to be a poor work environment. The study showed that an average loss of \$80/sow/outbreak in response to doing nothing before or during an outbreak.

Viral inoculation with veterinary supervision is an intervention strategy that has proven effective in the past. Exposing all the sows in the herd to the particular PRRSv causing the infections can result in a decreased loss of revenue. The study showed that this strategy resulted in an average loss of \$60/sow/outbreak. That is \$20 less than doing nothing and includes the cost of the intervention. Viral inoculation can be achieved by sampling sows blood to develop a homologous autogenous vaccine or via exposure due to proximity and bio feedback. The cost associated with viral inoculation averaged about \$2.90/sow/outbreak.

The study demonstrated that the strategy providing the optimum financial impact on a PRRSv outbreak was the use of Pulmotil. The loss after use of Pulmotil with or without viral inoculation was limited to an average of \$20/sow/outbreak including the cost of the intervention. The cost related to the Pulmotil treatment was an average of \$12.80/sow/outbreak.

The PRRS virus has been proven to attack and kill or damage immune system cells, particularly in the lungs. This leaves the pig at risk to costly secondary infections that impact health and growth. The virus attacks and kills disease fighting microphage cells. Macrophage cells eliminate foreign bacteria or virus cells by engulfing and digesting them. The macrophage can then present some parts of the foreign bacteria or virus to other immune cells to produce antibodies.

When Pulmotil is used, it concentrates in the macrophage cells in the lungs and enhances their natural bacteria and virus fighting ability. Pulmotil's unique action allows the drug to have a concentration 10 times higher in the lung than in the blood. This ensures greater protection in the area where the PRRS virus accumulates.

Management, genetics, farm location and herd history can all dictate the severity of a PRRS outbreak. Strategies for preventing and controlling PRRS should be tailored to individual operations. Proper biosecurity and herd benchmarking are key to avoiding and recognizing disease outbreak. The economic impact of a PRRS outbreak can be controlled with the right intervention strategy.

#### Cost Review for Intervention Strategies:

Intervention	# of Herds	\$ loss/sow	Intervention Cost (included in loss/sow)
Do Nothing	7	\$80	\$0
Viral Inoculation	6	\$60	\$2.90
Pulmotil	10	\$20	\$12.80

### BSC Annual Pork Producer Meeting

January 27<sup>th</sup> at BSC, St. Marys  
Dinner At 6:30  
Meeting to follow

Agenda includes:  
Recent Pulmotil Trial Information  
(Ontario Data)

*Contact your BSC representative  
or call the office  
if you plan to attend*

### OPIC Bulletin

Ontario swine veterinarians have utilized the OSHAB PRRSv Database to identify that there is circulation of a virulent strain of PRRS virus in Southwestern Ontario with an RFLP pattern designated as 1-22-2. This strain of PRRS is very problematic in the breeding herd and the nursery phases of the production unit. In the breeding herd

there is a dramatic increase in fever, off feed, early farrowing, early and late abortion, stillborns, mummies, pre-wean mortality and repeat breedings. The nursery is affected by increase in post weaning mortality (>30%) with unthrifty, thumping and generally poor doing pigs. This strain has been in Ontario for several years, however; analysis of the OSHAB database indicates increasing frequency and spread of the virus. The 1-22-2 PRRS virus was identified on 2 farms in 2007, 2 farms in 2008 and 6 farms in 2009. In the last quarter of 2009, the herds infected with this virus have been concentrated in the Lambton and Middlesex County areas.

### 2009 Feed Costs

We can now calculate feed cost for your operation for 2009. Contact your BSC representative to set up an appointment.

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**HOG UPDATE** is published in the interest of helping hog producers become more profitable. We welcome your comments.

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