# Economic Costs of PEDv





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t's said that it's easy to do a bad job of a 'bad job'. For those jobs that each of us hate to do it's easy to pay less attention to detail, after all we don't really care to do it in the first place. The problem with this approach the job now becomes more involved, complicated and more issues tend to arise because we didn't give it the attention it deserved when we first discovered it. However if we strived to do it right the first time – we would alleviate many future headaches and costs associated with the task at hand. A prime example would be producers dealing with a PEDv outbreak. Effectively making the best of a bad situation.

The first case of PEDv in the United States was identified on May 17, 2013 and subsequently it's estimated that 30% of the U.S. herd is impacted by PEDv - with PEDv positives cases being reported in Ontario and Manitoba producers need to review and maintain strict biosecurity protocols more than ever to limit the spread of this economically devastating disease.

PEDv was one of the topics covered (by Drs. Peter Provis, Kurt Pregchuas, and Egan Brockoff) in a series of producer meetings Prairie Swine Centre hosted (co-sponsored by Elanco Animal Health) across Saskatchewan, Alberta, and Manitoba throughout March and April. Based on record attendance, and the number of questions asked, pork producers are very interested in how to remain PEDv free, after all, producers who remain free of PEDv maintain a huge economic advantage to those PEDv positive operations. The presentation focused on the `Clinical Management and Economic Implications of PEDv specifically covering the areas of:

- 1. In-barn clinical progression
- 2. History of PEDv spread,
- 3. Outcomes at the farm level
- 4. Elimination of PEDv
- 5. Effective sanitation
- 6. Economic impact of PEDv.

#### **Economic Impact of PEDv**

Biosecurity is the key to prevention. While most resources available focus on the clinical symptoms, outcomes, management, and elimination not a lot of concrete information has been shared regarding the potential economic implications when PEDv hits an operation. Data presented by Dr. Peter Provis (Elanco Animal Health) focused on what type, and period of time, production losses would be associated with a PEDv outbreak.

#### **PEDv Impact on Reproduction**

- Sows infected with PEDv in the first 30 days gestation had a 12.6 % drop in farrowing rate
- Gilts infected in the first 30 days had a drop in born alive of 2.2 pig
- 100% mortality for 3 to 6 weeks

#### Performance Loss in Grower-Finisher

- · ADG impact variable
- Negligible to 2 weeks growth lost
- Typically 3 to 7 additional days in finishing

#### **18 Farm Retrospective Analysis**

- · 6 weeks to return to baseline productivity
- 1,500 to 2,800 pigs NOT weaned per 1,000 sows

The impact of management on a PEDv outbreak can be economically substantial. Utilizing the Prairie Swine Centre-George Morris Centre enterprise model – we examined two scenarios surrounding a PEDv outbreak: best case vs. worst case scenario. Best case scenario is one in which a PEDv positive operations works with their veterinarian and does everything right: feedback to 100% of the sows, tightened biosecurity, and rooms pass the white glove test after washing to name a few. While worst case farms misses those small things like ensuring all animals receive feedback.

Figure 1 highlights the potential impact on pre-weaning mortality under excellent and poor management strategies. Under the excellent management it takes 6 weeks to return to baseline *(Economic Cpsts of PEDv...Con't on page 12)* 



Figure 1. Impact of Pre-Weaning Mortality comparing excellent management comapred to poor

### SYMPTOMS IN SOW BARNS

- Both sows and piglets are affected by PEDv.
- PEDv can kill up to 100 percent of infected suckling pigs.



Sows often scour, become lethargic, and may vomit; they might also develop mastitis in the farrowing barn.







► Farrowing barn sequence of events after infection: Suckling pigs have watery diarrhea, become emaciated (razorback), and display abnormal behaviour such as lying atop the sow or other littermates; piglets waste away and most die within five days of birth.

### PREVENTION

- ••••••
- PEDv is transmitted by infected
- Biggest risk factor is transport
- Trailers must be scraped out in returning to any swine premise
- Ask your transporter if the traile washed before it arrives on you
- Wash facilities should follow provide the should follow p
- Make sure the wash facilities us
- Trailers should be washed, disir
- Use detergents and disinfectan
- Recommended to wash trailers
- Farms can protect themselves protocols: http://www.swineh
- Key areas to focus on include:
- Deadstock (onsite composting,
- Manure handling (haulers neve
- Loadout procedure (dedicated
- Entry procedures (clean/dirty li
- Visitor procedures (essential vis
- Disinfection of all equipment, t
- Quarantine facilities for replace
- There is no available vaccination

# DIAGNOSIS /

- Be vigilant for PED (TGE-like) sy
- Report all suspect cases to you
- If PEDv suspected, send in sam Testing available at Veterinary I
- If infected, follow veterinarian's and alert visitors and neighbour

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## : BIOSECURITY

- d feces.
- trailers returning from the U.S.
- the U.S. and then washed before e in Canada.
- er has been in the U.S. and/or ur premise.
- roper washing procedures:
- ansportation\_Biosecurity.php
- se fresh, non-recycled water.
- nfected, and dried (at 60°C for 20 min). ts at labelled dilution rates.
- after visiting plants/assembly yards. by practicing strong biosecurity
- ealth.ca/On-Farm Biosecurity.php

offsite pickup, or separate driveway). er cross paths with on-farm traffic). clothing; disinfection of loadout). ne; dedicated clothing; shower-in). sitors only; adequate downtime). ools and supplies entering the barn. ement gilts (if possible).

## TREATMENT

mptoms.

r herd veterinarian immediately. pples (feces or intestine, fresh/chilled). Diagnostic Services (VDS) Manitoba. s instructions on eliminating the virus, uring farms.

## SYMPTOMS IN NURSERY / GROW-FINISH

- Nursery and growing pigs display more subtle symptoms.
- PEDv strips the small intestines in these pigs as well, but they are able to regenerate intestinal cells and recover.
- Little to no increase in mortality, although morbidity is quite high.



▲ Nursery and growing pigs show signs of wasting (look unthrifty/thin).



Diarrhea (and possibly vomiting) is present in nursery and growing pens. Nursery pigs might become chilled and show abnormal behaviours such as piling.

# Personal Profile

### Sherry Wailing

herry Wailing joined Prairie Swine Centre in January 2013 in the position of Executive Assistant. Her role is to assist with the accounting activities as well as to assist the CEO/ President with matters relating to the Board, staff and visitors. Her training in accounting and human resources as well as extensive experience with a variety of organizations, has prepared her well for this role. Sherry started here at the Swine Centre working two days a week and recently moved to four days a week.

Born and raised in Saskatoon, Sherry has spent most of her life here, other than a few years in her early twenties when she worked in Calgary and then at Panorama Ski Hill in BC. Although she wasn't a skier, she says the two years she spent living in Invermere

*(Economic Cpsts of PEDv...Con't frompage 5)* productivity with 4 weeks of total piglet loss; while under poor management it takes 10 weeks for baseline productivity to return including 7 weeks of total piglet loss. A similar trend to pre-weaning mortality can be seen with farrowing rate and born alive – the best case scenario has less of a total weekly impact over a shorter period of time. Using the data in figure 1 shows pre-weaning mortality, for the quarter in which the PEDv outbreak occurs, increases to 46% and 66% for the best and worst case scenarios respectively, while annualized returns increase from 10% to 18.9% and 23.9% respectively.

So what does this mean to the cash flow of the operation? Table 1 shows the economic impact per sow place taking into account changes in pre-weaning mortality, farrowing rate, born alive and finisher performance. We can see that in the best case scenario and then at Panorama were some of the best times of her life. She often goes back to the area to visit friends. After returning to



Saskatoon, Sherry settled into a career of payroll and accounting, working full-time during the day and soon starting a part-time home based accounting business as well. She has continued this business for the past 27 years, providing payroll, accounting, and consulting services for small businesses and non-profit organizations.

In her spare time, Sherry enjoys travelling, gardening and spending time with family, friends and her two cats, Cally and Chloe.



#### Numbers game?

- 1. If a 2-3 day old piglet produces 1B virions per 1 ml of feces
- 2. 100 mls of feces will contain 100B virions
- Assume a biosecurity cleaning procedure or processing procedure effectiveness of 99.999%
- 4. 1M virions remain!

the impact of pre-weaning mortality alone will set a producer back \$216 per sow place, which is substantial, but a huge improvement compared to the worst case scenario \$338 per sow place, a \$122 sow place difference!

While experiencing a PEDv outbreak would no doubt be heartbreaking and one which no producer should not have to experience. Performing an excellent job in a bad situation can pay huge dividends both in terms of dollars and cents and staff morale.

### Table 1. Economic costs associated with a PEDv outbreak comparing good management and poor management practices.

Best Case Scenario			
	PWM	Combined	Finishing
Parameters	18.9%	18.9% PWM, 89.3% FA, 12.43 BA	3 additional days
Per sow place	-\$216.00	-\$243.00	-\$31.00
Worst Case Scenario			
	PWM	Combined	Finishing
Parameters	23.9%	23.9% PWM, 87.4% FA, 12.22 BA	7 additional days
Per sow place	-\$338.00	-\$432.00	-\$96.00

# Coming Events

### **Alberta Pork Congress**

Red Deer, Alberta June 10-12, 2014

#### **World Pork Expo**

Des Moines, Iowa June 4-6, 2014

#### Red Deer Swine Technology Workshop

Red Deer, Alberta November 5, 2014

#### **Ontario Pork Congress**

Stratford, Ontario June 18-19, 2014



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