

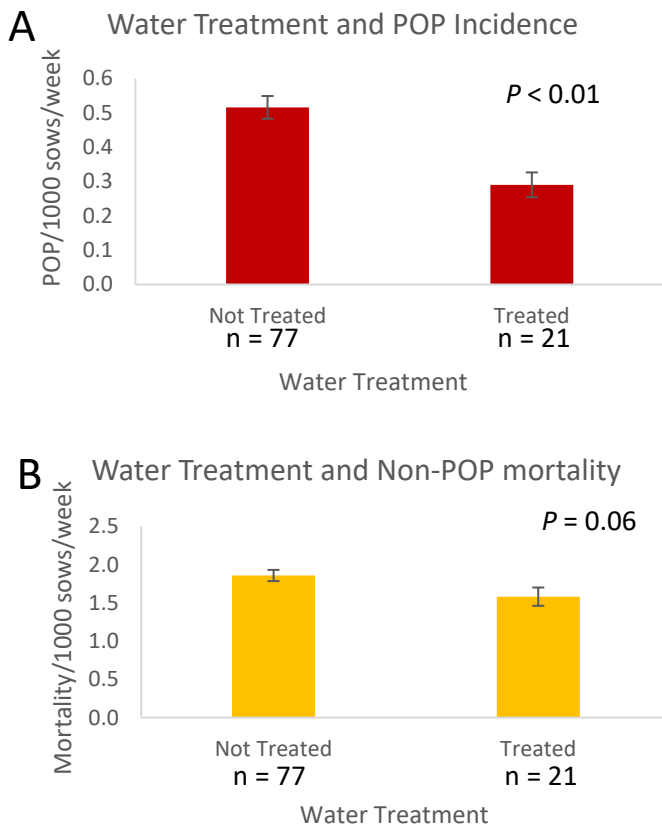


Project Background

The Iowa Pork Industry Center at Iowa State University, with funding from the National Pork Board, initiated an industry-wide survey that involved U.S. swine breeding herds to identify potential risk factors that could be investigated to develop strategies to prevent pelvic organ prolapses (POP).

One of the factors evaluated was sow drinking water source and treatment. Water has often been referred to as the “forgotten nutrient,” but these data indicate that it may be an important factor to consider.

Water Treatment and Prolapse Incidence



Farms involved in the study

- 104 sow herds in 15 U.S. states
- Sow farm inventory ranged from 614 to 10,606 sows
- Annualized POP incidence ranged from 0.3% to 10.3% (average = 2.7%)
- Farms had one of three water sources
 - Well
 - Rural
 - Pond
- Seventy-seven farms did not have water treatment systems
- Twenty-one farms had either chlorine or peroxide based water treatment systems
- Rural water was considered “untreated” in our analysis because it was not treated on-farm.

Farms using a water treatment system had lower POP incidence compared to farms without a water treatment system.

Figure 1 (above). Farms using a water treatment system had lower POP incidence than farms that did not (A). We only saw a trend for lower incidence of non-POP mortality (B).



Water Treatment and Sow Mortality

Farms not using a water treatment system had, on average, almost double the annualized POP mortality compared to farms using a water treatment system.

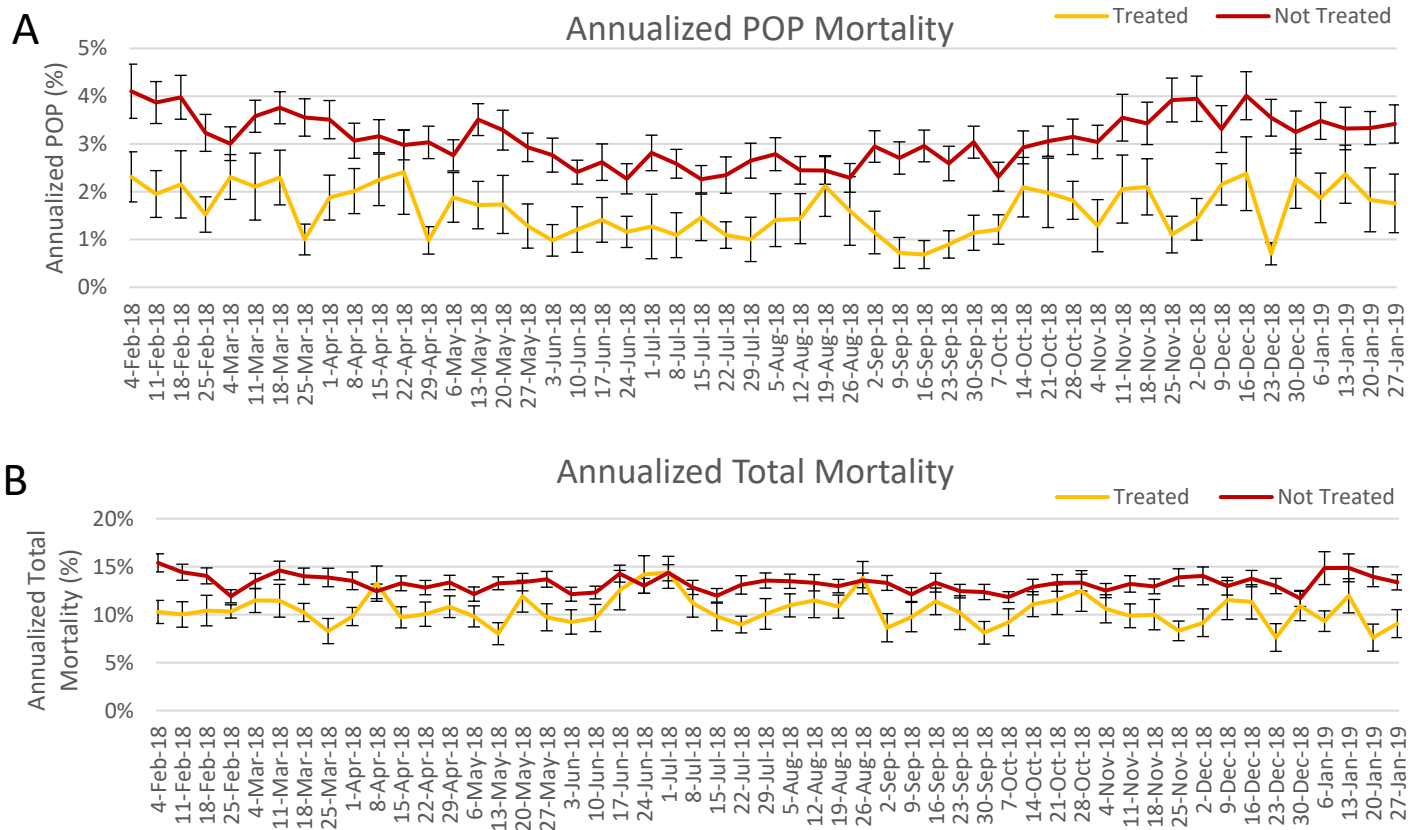


Figure 2 (above). Weekly annualized POP incidence rate (A) and total mortality (B) for farms using treated vs. untreated water. The average POP incidence of farms with untreated water (red line) was on average 1.5% higher than the average POP incidence of farms that did treat their water (yellow line). The average annualized total mortality of farms with untreated water (red line) was on average 2.7% higher than the average annualized total mortality of farms that did treat their water (yellow line).





Farms using either a hydrogen peroxide or chlorine-based treatment system had a lower POP incidence compared to those farms that did not treat their water.

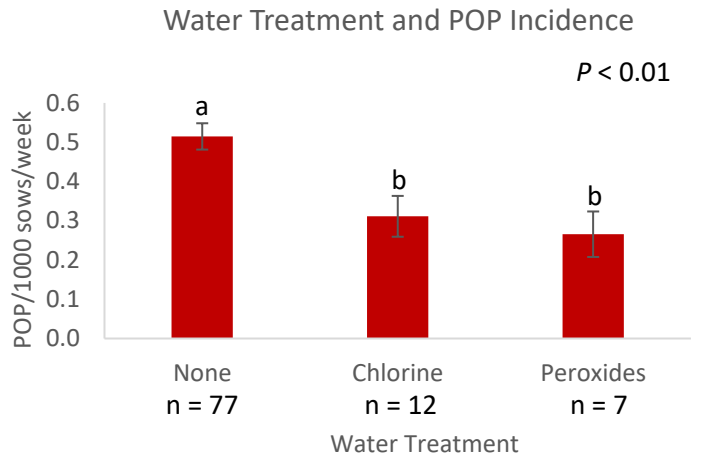
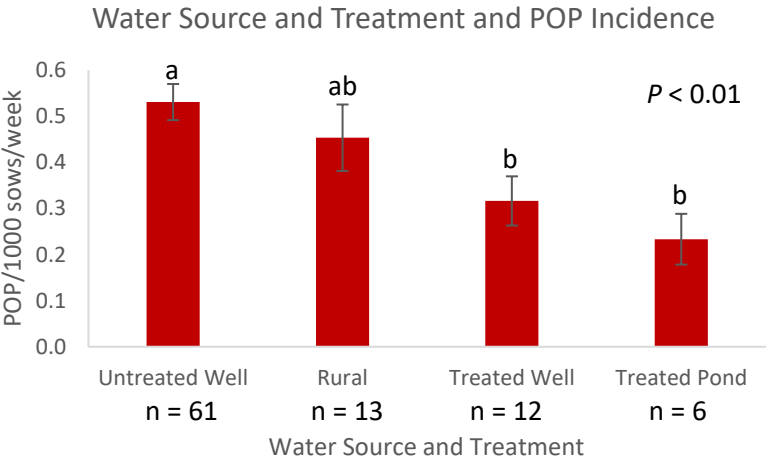


Figure 3 (above). The type of treatment did not seem to be as important as treatment itself, since farms that treated with either a hydrogen peroxide or chlorine-based treatment system had a lower POP incidence compared to those farms that did not treat their water.



Farms using treated well or treated pond water had lower prolapse incidence than farms using untreated well water.

Figure 4 (above). Farms using untreated well water had higher POP incidence compared to farms using treated well or treated pond water while farms using rural water did not differ in POP incidence compared to farms using treated or untreated water. Bars with different superscripts differ significantly ($P < 0.05$).

Future Directions

Our next steps are to validate that treating sow drinking water can help improve sow health and reduce prolapse incidence. If treatment systems do help, we will then need to investigate the biological reason for these improvements.

