PIPESTONE System

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COMBATING MISINFORMATION WITH SOLID RESEARCH IN H1N1 PANDEMIC AFTERMATH

Now that the shouting's stopped, responsible scientists can look at the 2010 flu pandemic and draw conclusions. What can be done to prevent this virus, or another, from infecting swine herds? Montserrat Torremorell, DVM and PhD, intends to learn how the flu virus travels and how to short-circuit lingering infections in some herds.

"This is important because endemically infected farms represent a source of virus for other herds, other livestock species, and people," she says. "In addition, endemically infected herds offer ideal conditions for the virus to change and evolve—characteristics that we need to understand to prevent future infections, including pandemics."

Dr. Torremorell assumed duties as Allen D. Leman Chair in Swine Health and Productivity at the University of Minnesota College of Veterinary Medicine in May 2009. Whatever she expected to do first, everything changed when swine health and H1N1 became a worldwide discussion topic.

Though Dr. Torremorell doesn't yet have the answers she'd like, she knows one thing for certain, "The recent pandemic strain did not move from pigs to people—it went from people to pigs! As a result, there are now farms positive for flu, where pigs had been negative before."

What will it take to remove that ongoing threat? "My students and I are very interested in understanding what happens with flu in the field. How is the virus transmitted in pig farms? We're figuring out which population of pigs is responsible for keeping the flu virus active, working under the hypothesis that piglets play a role," Dr. Torremorell explains.

One challenge encountered in this research: prevalence in sow barns is typically very low. Thanks to maternal immunity, few un-weaned pigs currently show signs of flu. But to satisfy high research standards she's testing lots of pigs, Dr. Torremorell says. "Piglets, prior to weaning, are little reservoirs for flu, which is why a sow farm could stay infected and be the source of virus that could move to other barns in the production chain."

Learning what tactics will control transmission

Understanding what prevents transmission and discovering which type of vaccine will be fully effective are other facets of this research. If one type of vaccine creates only partial immunity it allows flu virus to continue circulating, Dr. Torremorell notes.

In addition to vaccine research, she and her team are also very interested in the role of aerosol transmission—similar to current PRRS virus research. "We've validated the accuracy of our cyclonic air-collectors by testing the air around pigs we've experimentally infected with flu. This winter we'll go to the field to see whether aerosol flu transmission happens between farms."

The group Dr. Torremorell leads hopes to pinpoint how farms become infected. "Is it aerosol transmission, pigs, or people?" she wonders. "Pigs can infect people but people can also infect pigs. That was clearly seen in the recent flu event. So our research will probably lead to steps pig-barn workers can take to prevent infection."

This research effort at the U of M will likely lead to an education effort or to recommendations pig production companies could implement. Mandatory sick leave for flu victims or company-wide vaccination programs might be among the suggestions.

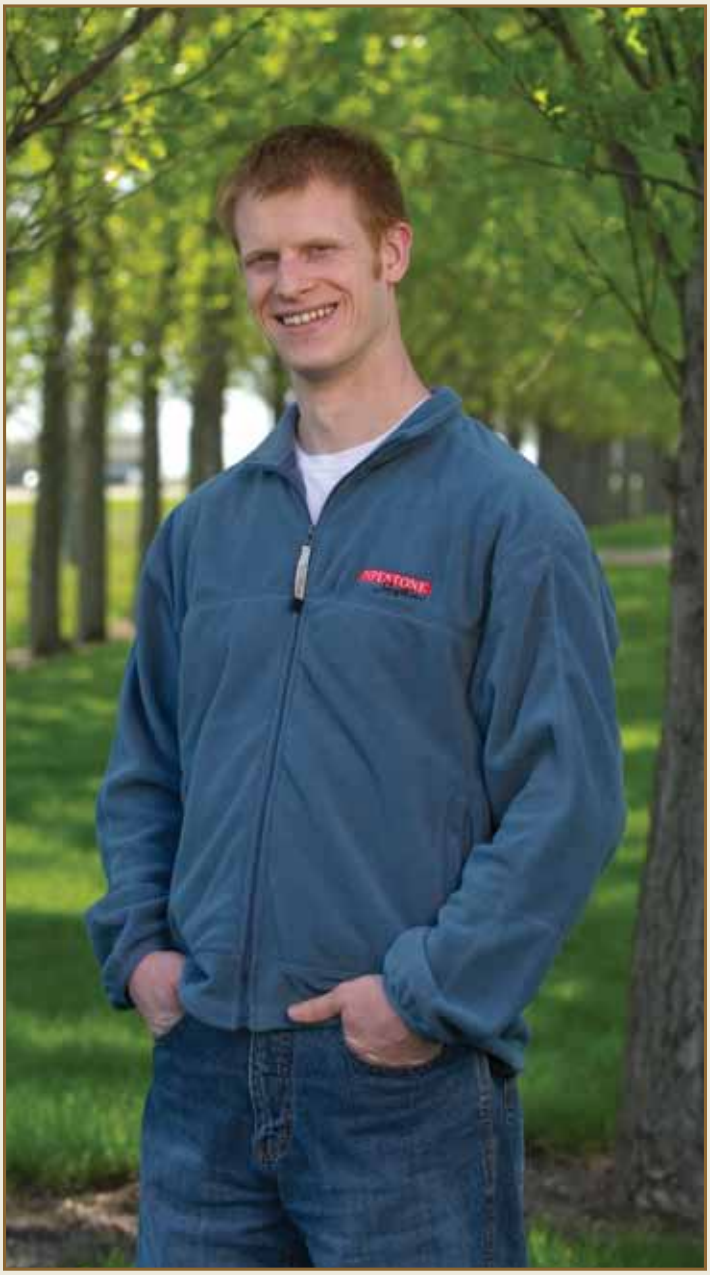
"During the Leman Conference in September, we asked people in the swine industry to tell us whether they do or don't get vaccinated for flu and why or why not," says Dr. Torremorell. "We hope to better understand the disease interface between animals and humans. With that knowledge I want to go back to the farms and get rid of the disease!" ■

READING BETWEEN THE LINES

"I was brought on board to watch expenses, control costs, and increase awareness of the cost side of Pipestone System," Kyle Caskey says, in the manner of someone who's had four months to crystallize his thoughts of his new job. As System Analyst, he's clearly pleased to spend every day searching between the lines of reports for ways to save money and clarify financial goals.

"We've been focused on production and we're very good at it…but that has translated to less emphasis on the cost of great pigs and exceptional sow care. Dr. Luke Minion wants me to study everything that goes into those expenses."

Kyle describes how he works with System accountants.



"I'm reviewing all bills for each sow farm and looking at checks that we write. My responsibility is to identify opportunities for improvement and clean up our processes."

Give us a for-instance, would you Kyle? "Sure. I looked at charges for trash collection, phone lines, and Internet usage and found loose ends such as call-waiting service built into phone charges for the barns. It was something we could do without that was costing us every month."

Kyle realizes the System grew rapidly and of necessity had to reach for effective production first. "But now we're ready to treat the hangnails. Without being overly analytical about it I hope to increase awareness of costs system-wide. Production is so important but we need to be smart about our expenditures."

So Kyle, will a shareholder appreciate the part you're playing in the operation? "Part of their buy-in is trust. We're managing their pig production and overseeing their investment. Hiring me is an active step to ensure shareholders someone is watching so they get the best deal for their money. I believe it's possible to drive costs lower without sacrificing production. People in the office know I want them to explain what is essential and what isn't—even though that means looking through every invoice suppliers send us."

He hopes to inoculate all sow farms with the best cost-control techniques various managers have developed. "Let's take what's smart that Farm A does and transfer those procedures to other farms, improving efficiency across the entire System."

Also, Kyle is working with System accountants to develop financial statements and budgets that are more accessible to everyone in the system. "What goes into raising a pig? I'm weeding out anything that could be construed as confusing to shareholders in an effort to make everything more readable and understandable."

In another effort to make the numbers accessible while reducing wasted resources and effort, Kyle is cooperating with our website provider to develop channels for submitting and sharing information online.

At SDSU, he completed a double major in ag business and ag economics with minors in animal science, accounting, and ag marketing. After graduation, he worked for a nationwide livestock-supply company for five years before moving to Pipestone with wife Sarah, daughter Alyvia, 2½, and another child on the way.

Growing up on the Caskey farm near Pipestone and showing purebred Hampshire and Dorset sheep, Kyle planned for a career that would bring him back to animal agriculture. Maybe even then he could read between the lines. ■

NEW AIR-MANAGEMENT PLAN LESSENS PRRS RISK

OUR OWN CLEAN-AIR INITIATIVE

Dr. Joel Nerem

For the past year-and-a-half, Pipestone System has worked to clear the air. We installed filters in a number of our sow barns and re-designed the system whereby people and supplies enter our buildings.

We're successfully filtering in-coming air by applying techniques already working well at our associated company, Pipestone Artificial Breeders (PAB). (In consultation with Dr. Scott Dee at the University of Minnesota, PAB filtered its boar stud buildings against the PRRS virus four years ago and the results are impressive.) First, we needed to adapt technology to larger-scope facilities—our sow farms are 10 times bigger than the boar stud.

Filters designed to block PRRS virus and remove some other air-borne diseases were the initial step toward improved biosecurity. But once we made those installations we quickly realized protecting animals in our sow barns would require second and third layers of precautions.

Recognizing the financial investment owners are putting into the filtration system, we knew we had to cooperate with the job the filters were designed to do. We worked with a ventilation expert to seal leaks, ensuring no air can enter a building except through filters. Then we turned our attention to people and materials.

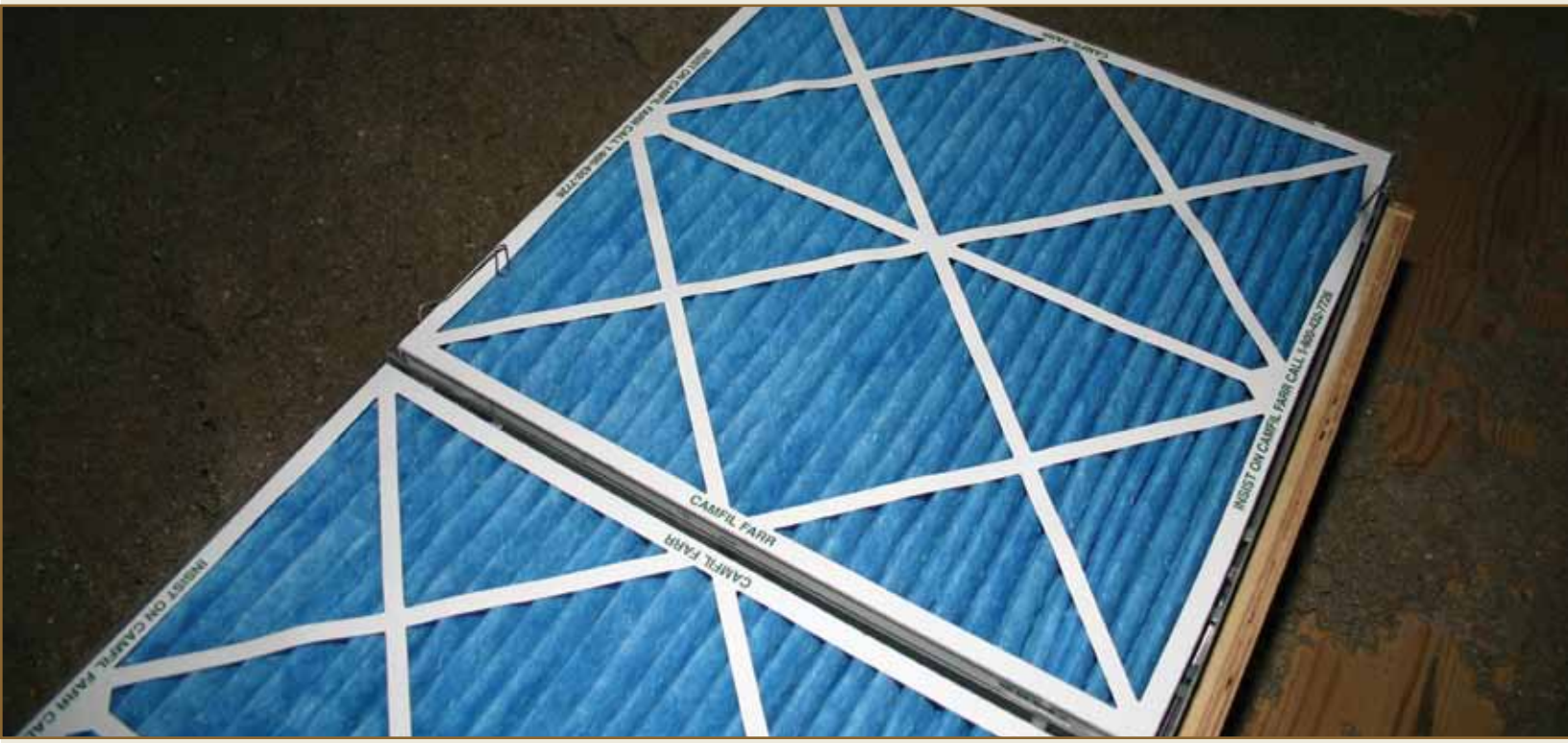
How should we arrange for employees and professional staff to move in and out of sow barns without breaching the filtration program? How would we introduce supplies that arrive daily without potentially contaminating our sites?

I'd say we learned a lot as we evaluated our practices and fine-tuned our procedures. We mandated a system of what you might call air-locks at building entrances. Essentially, one door must never open before another is closed.

Here's another example of new thinking. When we studied our building entryways, we discovered an environment where viruses might feel too welcome. So, we added radiant heaters between the first doorway and the shower-in area to ensure air there is warm, dry, and virus-unfriendly. Radiant heaters in supply-receiving areas also cut disease risk.

Increasingly we're implementing closed-herd practices by establishing a period when a building is new-gilt free. Through this practice we intend to create a PRRS-negative sow population.

Why apply so much money and attention to air? Every facet of our biosecurity protocol aims to improve sow and pig health conditions. There was a time when Pipestone System focused on PRRS control in our sow barns. Now we're ramping up toward a new and better objective: PRRS elimination. ■



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INSIDE

PIT FOAMING: WE ASKED AN EXPERT

Willie Langholz

It's pit-pumping season and you may be seeing something troubling, something you don't much like. We don't like it either, so Willie Langholz of Pipestone System put the pit foaming question to Research Engineer David Schmidt at the University of Minnesota.

Here's the reply. "Willie, unfortunately there are still no 100% control options out there. In fact, I'd say there are no choices that work 50% of the time. Lots of remedies have been tried, all with varying success. And frankly, we can't tell why something works in one place but not the other."

David continues, "Microbial products seem to help some of the time, if used regularly and started when you have an empty pit. The Synergize product you sent information on is one of a few defoamers now on the market to help control foam in swine barns. I know similar de-foamers have worked in other barns—but again, that's only some of the time. This type of product might also work to hold the foam after pumping. Again, de-foamers work often, but not in all cases."

"We think the nature of the foam is actually different between barns; that variation makes products work differently," David continues. "I wish there were more good answers but we still don't know a cause, which makes finding a cure difficult."

David told Willie he's been working with producers who've tried copper sulfate additions to their pits. This step seems to limit foaming in some barns but—again—not in all barns. "We are doing work in the lab with copper sulfate but we aren't seeing the same results. So, there may be something else going on."

Others who are reviewing the problem suggest a feed additive may help control foam, according to David, provided it is started early, that is, in an empty pit.

David seeks the cause of this strange phenomenon that shows up in some pits on a farm and not others, and in some parts of the state but not others. In the meantime, Willie suggests you test-drive any foam-control product before you invest in a big supply. "Try a little to see what results you get."

Go to our website, *pipestonesystem.com*, for more of Willie's conversation with David Schmidt, a list of pit additives you might try, and a look at David's frothing manure videos. ■