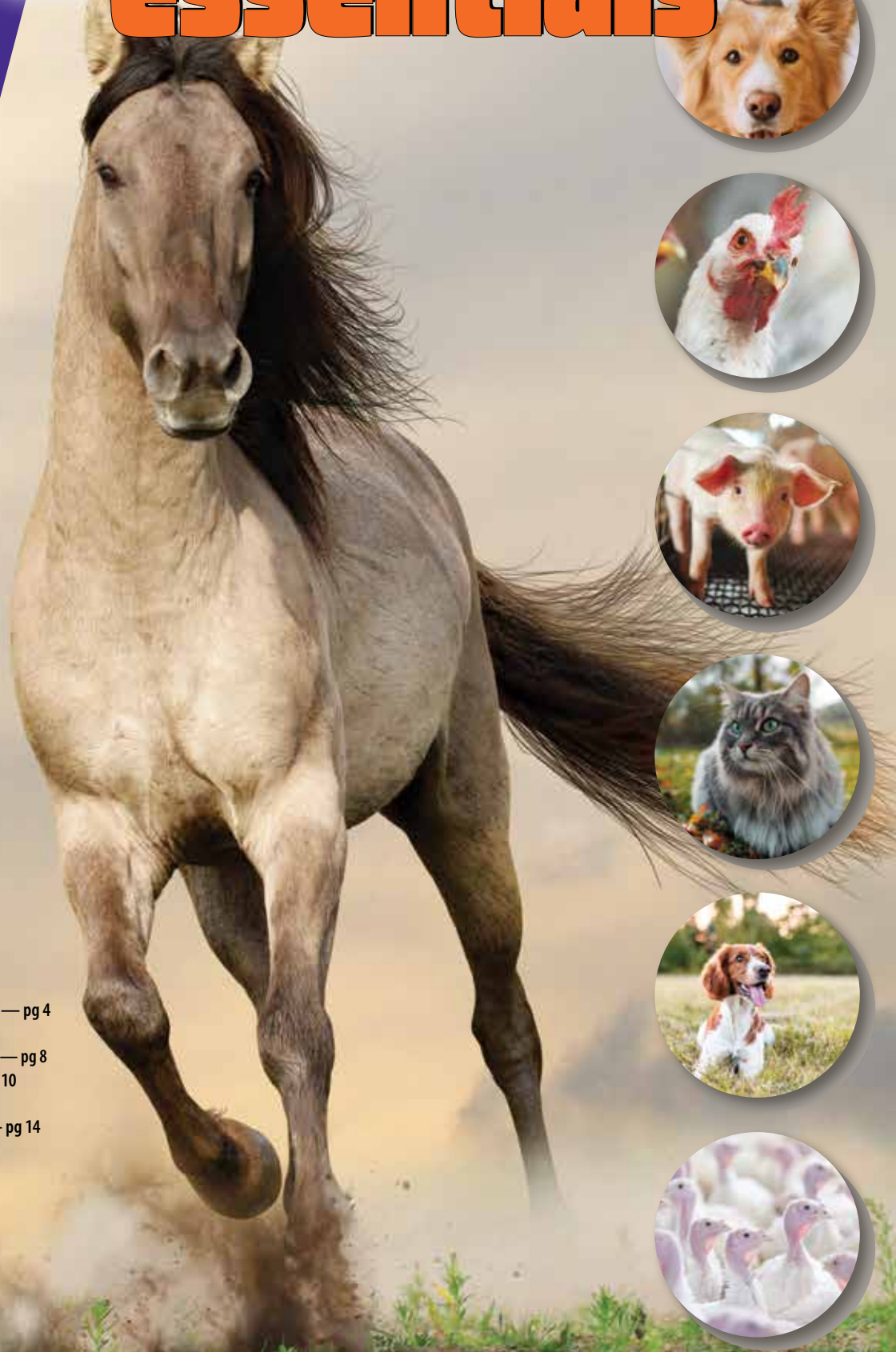




Aurora Pharmaceutical, Inc.
Innovative Products Backed
by Exceptional Service

Volume 5 Issue 1

Business essentials



Business Essentials Inside

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Demand

PRODUCT OPTION TRANSPARENCY

FROM YOUR DISTRIBUTION PARTNERS



Bob Rehurek,
Director of Sales and Marketing
Aurora Pharmaceutical, Inc.

Every year we work harder and more efficiently to bring new, and better products to the veterinary industry only to be handcuffed by government red tape, exorbitant registration fees and growing distribution roadblocks.

Unfortunately, veterinarians are paying the ultimate price with reduced product selection, much higher pricing, longer back orders and ridiculous load-up programs to qualify for best pricing. What's even worse for our industry is most veterinarians aren't aware they have alternative products available, because many large ethical distribution companies have entered binding purchasing and partnership contracts with "Big Pharma" that effectively force out products from smaller companies like Aurora.

While we firmly believe ethical distribution is the best way to offer products to veterinarians, the marketing and sales handcuffs are choking small, innovative companies to use alternative marketing and sales routes like regional distributors, direct mail, etc. to promote/detail new products as well as existing product lines.

Aurora is committed to seeking alternatives to expensive veterinary drugs and solutions. We are often priced 30%-50% less than pioneer products containing the exact same active ingredients and dosing regimens. However, unless veterinarians demand their distributors offer alternative products, you're just paying more ... and so are your customers. At nearly \$500,000 per new ANADA label we bring to market, combined with a growing distributor network that won't offer "outside network" products, effectively shuts down our desire and ability to bring



new, less expensive products to the market. Again, it's the veterinarian and their customers who ultimately suffer.

What's the answer? The veterinarian.

- ✓ Only you can demand product transparency.
- ✓ Only you can have office staff search for alternative, less expensive product options.
- ✓ Only you can put yourself in a position to offer similar product solutions at greatly reduced pricing that immediately impact your clinic's bottom line ... and that of your production animal clients.

Aurora is owned by food production veterinarians who understand the complexity of today's veterinary practice. That is why you need to make sure your distribution partners are working for you, not just their bottom line. At Aurora, we sincerely believe veterinarians should be deciding what product solution is right for their clients, their practice and their future — not the product that financially benefits the distributor. Without product selection options and purchasing transparency and selection, we've already lost. **a**



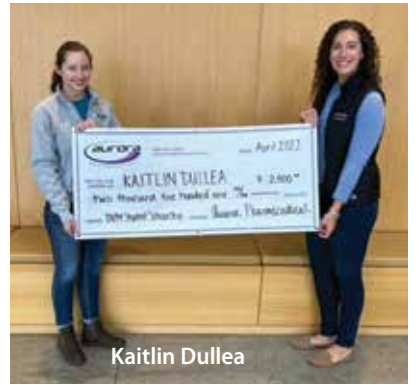
Sabina Ponicki



Jacqueline Chevalier



Tristen Fulton



Kaitlin Dullea



Brittany Papa



Milan Piva



Sidney Smith, Abby Cox



Kara Valasek

Logan Kubitz, Brooke Fincher, Makenna Hittson, Naila Telles and Ashleigh Patridge



SUPPORTING VETERINARY STUDENTS HELPS OUR INDUSTRY

"We are extremely excited to announce the names of the 21, third-year veterinary students who will be receiving scholarship funds to assist in their veterinary degrees," says Bob Rehurek, Director Sales and Marketing at Aurora Pharmaceutical. "The scholarship recipients were selected based on a combination of academic achievement, related work experience, community and university involvement, goals, essay and letters of reference."

The winners of the \$75,000 scholarship funds are as follows:


\$10,000 Award: Jacqueline Chevalier, Cornell University

\$5,000 Awards: Declan Ryan, UC-Davis; Kara Valasek, Iowa State; Brittany Papa, Cornell University; Lindsey Fenster, U of GA; Lena Ngo, UC-Davis; and Sidney Smith, NC State

\$2,500 Awards: Angeline Gano, U of Penn; Abby Cox, NC State; Ened McNett, Oregon St.; Hailey Gollnick, U of GA; Isabella Healy, U of Penn; Molly Cleveland, Ohio St.; Paige Gabrielson, CO State; Sabina Ponicki, U of MN; Lindsey Miller, U of MN; Tristen Fulton, Iowa St.; Brittany Campbell, Texas A&M; Kaitlin Dullea, Cornell Univ.; Milan Piva, U of MO; Vaiva Palunas, Wash St.



Angeline Gano & Isabella Healy

"When we decided to create a program to support DVM students, it was important to us to find ways to show our support to the next generation of DVM professionals," said Grant Weaver, DVM, Swine Technical Service Veterinarian at Aurora Pharmaceutical. "Supporting the future leaders within the veterinary industry was really our driving force when developing these scholarships." 

AURORA CONGRATULATES THE INAUGURAL VETERINARY CLASS OF TEXAS TECH WITH \$15,000 SCHOLARSHIP FUNDS

As part of Aurora's continued commitment to enhance the path of veterinary students into the veterinary industry, we are sincerely pleased to support the inaugural class of veterinary students at Texas Tech University's School of Veterinary Medicine, Amarillo Campus, by offering scholarship funds.

We are pleased to announce Naila Telles as the 2022 Aurora Pharmaceutical Texas Tech Inaugural Class Scholarship \$5,000 award winner. Four additional scholarships worth \$2,500 each were also awarded for a total of \$15,000 in scholarship funds. Our selection




Naila Telles

committee awarded Ms. Telles the \$5,000 first place scholarship award based on her continued commitment and educational pathway to becoming a veterinarian.

Ms. Telles states, "Even with the high demand for more veterinarians, it's very tough to be admitted to veterinary school. I really appreciate Texas Tech's mission to actively admit students interested in rural veterinary medicine across multiple species and then try to make it more affordable. I'm so grateful to Aurora for the scholarship assistance."

Aurora (and other companies) is greatly appreciated to not only help us pay down our school debt, but also provide classes on how to manage finances and supplying mentors during and after graduation, so we are more aware of what's expected of us once we become veterinarians. I can't wait to become a veterinarian," she smiles.

Keep up the great work, Ms. Telles! Additionally, we want to congratulate the other Texas Tech \$2,500 scholarship recipients and wish them continued success in their pursuit of a degree in veterinary medicine: (above, left) Brooke Fincher, Makenna Hittson, Logan Kubitz and Ashleigh Patridge. 

NOTED MCGEE MEDICINE CENTER EQUINE
INTERNAL MEDICINE SPECIALIST SAYS . . .

DON'T BE AFRAID TO EVOLVE AND SPECIALIZE IN YOUR PRACTICE

J. Barry David, DVM, DACVIM (CSU '87, TA&M '97), is an Associate Internist at Hagyard's McGee Medicine Center, Lexington, KY, and one of the nation's most respected equine internal medicine veterinarians. Prior to becoming a veterinarian, he had hoped to become a pro football player like his father – Jim David, a defensive back for the Detroit Lions when they were a perennial playoff team.



Jim David

"He started every regular season game of his eight-year career," proudly states Dr. David. "He was a six-time Pro Bowler and three-time World Champion."

After retiring from the Lions, David immediately entered the pro coaching ranks - joining the Los Angeles Rams' coaching staff as defensive backs coach from 1960 to 1962. Lions' teammate and Hall of Famer, Joe Schmidt, hired David as defensive coordinator and assistant head coach. He served in that capacity for six seasons from 1967 to 1972. Among the star players he coached was Hall of Famer Lem Barney, whom David presented during his Pro Football Hall of Fame enshrinement in 1992.

But instead of a football career, Dr. Barry followed his mother's love of horses and became an equine veterinarian. "I had a unique and amazing childhood," smiles Dr. David. "While I certainly enjoyed hanging out with my dad at the Lion's training camps, I wasn't a very good athlete. It was my mother's love of horses that eventually guided my career move to be a veterinarian.

"We initially had pleasure horses when I was growing up, but then we got heavily involved in the racing Quarter Horse



J. Barry David, DVM, DACVIM

business. I enjoyed being around horses which provided me with exposure to veterinary medicine, which in turn, led me to want to be a veterinarian," he adds. What Dr. David didn't envision is the long road it would take to get him to what he truly enjoyed – equine internal medicine.

Prior to joining Hagyard's McGee Medicine Center, Dr. David spent a lot of time trying to find his perfect job. "To be

honest, I just wasn't sure what I wanted to do within the field of veterinary medicine and what facets of practice would fulfill my needs and be professionally gratifying. It took me a long time and several different jobs to determine that I wanted to practice as an internal medicine clinician," he says.

After graduating from veterinary school and completing his internship at Hag-



yards, Dr. David stayed on as an ambulatory associate for three years. Then, in the early 1990s, Dr. David, was an ambulatory practitioner in Virginia before becoming a track practitioner in Dubai.

"I enjoyed working with high-end racehorses," recalls Dr. David, "but that's when I decided internal medicine was what I most enjoyed doing. I left Dubai in 1994 and completed a residency in large animal internal medicine at Texas A&M University."

Upon completing his residency, Dr. David returned to Hagyard as an internal medicine specialist for a short stint before practicing at Blue Ridge Equine Clinic in Virginia, where he was a partner and Chief of Internal Medicine. In 2008 he joined the Equine Medical Center in Ocala before taking his current position at the McGee Medicine Center.

Now Dr. David spends his days working with, as he puts it, "The highest caliber of veterinarians, horsemen and equine athletes in the country." As an equine

veterinarian, Dr. David says the McGee Medicine Center is where you want to work. "The cases are both numerous and challenging, and we are generally not limited in the level of diagnostics or on the application of therapeutics we can use on each patient. In addition, we often get to participate in several research projects conducted by various investigators throughout the country."

When Dr. David first started working at the equine-specialized clinic, he says the work was seasonal in nature, with most of the work condensed into the foaling season.

"Now we're busy year 'round dealing with treatment of post-operative and medical colic's, respiratory tract disease, gastrointestinal tract disease and neurologic diseases. Much of my case load is referred in from Hagyard's vets or independent veterinarians. So, by the time they get to me, other very qualified veterinarians have looked them over and I can

collaborate with them to diagnose and then provide treatment for complicated medical cases. That's what I like the most about these cases. I enjoy how challenging each case is. They're all different and require my best efforts. Having over 50 experienced veterinarians at Hagyard's, including 12 board-certified specialists in Medicine, Surgery, Critical Care, Ophthalmology and Theriogenology, certainly makes my job easier."

The internal medicine specialist points to his increased uses of Equisul-SDT® (Sulfadiazine/Trimethoprim) in helping him manage many of his problem cases.

"Equisul-SDT is an excellent, safe, broad-spectrum antibiotic that I reach for more and more in my daily practice," Dr. David states. "It is often the first line of defense for the horses that require antibiotic therapy, but not intensive IV medications. I often combine it with an IV med when I see an infection that we need to get on top of. It's great for respiratory tract infections and especially in wounds and lacerations, horses often get. I've even used it successfully on some skin diseases. When I prescribe it to horse owners and trainers to administer on-farm, they tell me it's extremely easy to use and the horse never minds taking it orally. It's been a battle at times, but I'm happy to say most of our clients are now using Equisul over SMZ tablets."

In conclusion Dr. David says, "In all my wandering, finding the perfect job in veterinary medicine has taught me many things, but the most important is simply to keep an open mind. Like me, many veterinary students have a preconceived idea about what area of practice they want to do. I initially wanted to specialize in surgery or theriogenology, but look at me today ... internal medicine is what fires me up. Don't be afraid to change and evolve."



EQUISUL-SDT is a registered trademark of Aurora Pharmaceutical, Inc.
For product information and label directions, please visit www.aurorapharmaceutical.com



PEDv Positive Bioassay Reveals Houseflies Can Transmit Infectious PEDv to Pigs



By Grant Allison, DVM
Walcott Veterinary Clinic,
Walcott IA

When I met with Central Life Sciences, the topic was just fly control in barns. After talking about basic fly control for 15-20 minutes, a comment was made about another clinic interested in finding out if flies could be a vector for Seneca Virus A (SVA).

Hearing this was one of those “light switch on” moments. In our practice, the real economic loss is PEDv rather than Seneca virus and the connection with flies was immediate and obvious. What was not known is whether flies could be a vector for PEDv.

The possibility was obvious as was the mutually beneficial result if true. I needed to understand if flies are



a potential source of infection in otherwise biosecure facilities. If true, then I needed a means to control flies to (potentially) prevent an outbreak of PEDv.

To that end, an outbreak was confirmed in a client's barn that concurrently harbored flies. Samples were taken and sent to Iowa State Veterinary Diagnostic Laboratory (ISU-VDL) where a bioassay was conducted.

The bottom line was that the **bioassay confirmed flies can be a vector for PEDv**. The following is the results of a study we conducted in cooperation with ISU-VDL and Central Life Sciences, makers of diflubenzuron-based oral larvicide, Clarify®, which we now use to control flies.

Introduction

Despite extensive investments in biosecurity measures and protocols, farms still have unexplained cases of viral diseases caused by porcine epidemic diarrhea virus (PEDv), porcine reproductive and respiratory syndrome virus (PRRSV), and more recently Seneca Virus A (SVA). Insect vectors such as flies have been investigated as a possible source of PRRSV, PEDv and SVA^{1,2}.

Regarding PEDv, less is known about the potential role of insects in the transmission of this virus. Given the high cost of the disease, **estimated at \$400 per sow³**, the role of flies as a vector for PEDv warrants further investigation. The purpose of this study is to answer the question if flies are a vector for the transmission of PEDv to susceptible swine.

Materials and methods

Polymerase Chain Reaction (PCR) positive PEDv environmental fly samples (average Ct 24.5) and trap liquid samples (average Ct 26.5) were collected with Captivator® liquid traps (Starbar®) from a 2,400 head finisher in Eastern Iowa three days after a positive diagnosis for PEDv by fecal swab (Ct 16.5 pool of five samples) as the virus source for the bioassay. Liquid from the negative control trap was PCR negative.

A 10% whole-fly homogenate was created as the inoculum for a bioassay using three grams of flies in 27 ç of cell culture media at the ISU-VDL per laboratory procedures. Liquid trap samples were not diluted for the bioassay. The inoculum was evaluated again by rRT-PCR. The fly homogenate inoculum demonstrated a Ct of 27.1 and trap inoculum demonstrated a Ct of 26.9. The negative fly trap inoculum was confirmed rRT-PCR negative. Inoculum was frozen at -800C until the bioassay.

The bioassay was conducted at ISU-VDL under strict environmental conditions and research protocols. Four experimental groups of three-10-day old pigs, negative for PEDV were used as follows:

Group 1: Negative Control Trap Liquid

Group 2: PEDv ISU reference strain known to be able to infect pigs dosed at 1×10^3 TCID₅₀/mL (Ct 14.0)

Group 3: PEDv positive flies

Group 4: PEDv positive trap liquid

Each pig in their respective groups received 10 mL of the inoculum through an 8 French feeding tube passed into the stomach at 0 days post inoculation (DPI) followed by 10 mL of air to gently force remaining inoculum in the tube into the stomach.

Animal monitoring for clinical signs and detection of PEDv by rRT-PCR was conducted at 3, 5, and 7 DPI. Pigs were necropsied at 7 DPI.

Results

Pigs in Group 4 became rRT-PCR positive for PEDv at 3 DPI and remained positive at 5 and 7 DPI exclusively from the liquid flytrap attractant. The positive control group became rRT-PCR positive at 3, 5, and 7 DPI although pigs in the fly homogenate group remained rRT-PCR negative throughout the study. Negative control pigs remained rRT-PCR negative. No cross-contamination occurred during the study.

Diseases That Can Be Vectored by House Flies on Swine Farms

Disease	Disease-Causing Microorganism	Reference
Campylobacter infection	Campylobacter	Nichols, G. L. 2005. Fly transmission of <i>Campylobacter</i> . <i>Emerging Infectious Diseases</i> 113:361-365.
Escherichia coli infection	Escherichia coli 0157:H7	Sasaki, T., M. Kobayashi, and N. Agui. 2000. Epidemiological potential of excretion and regurgitation by <i>Musca domestica</i> (Diptera: Muscidae) in the dissemination of <i>Escherichia coli</i> 0157:7 to food. <i>Journal of Medical Entomology</i> 37(6):945-949
Porcine epidemic diarrhea	PED virus	Allison, G., P. Gauger, J. Zhang, and G. Spellman. 2019. PEDV positive bioassay reveal houseflies (<i>Musca domestica</i>) can transmit infectious PEDV to pigs. <i>Proceedings of the 50th American Association of Swine Veterinarians Meeting</i> .
Porcine reproductive and respiratory syndrome	PRRS virus	Dee, S.A, J.A. Schurrer, R.D. Moon, E. Fano, C. Trincado, and C. Pijoan. 2004. Transmission of porcine reproductive and respiratory syndrome virus under field conditions during a putative increase in the fly population. <i>Journal of Swine Health and Production</i> 12:242-245.
Porcine transmissible gastroenteritis	TGE virus	Gough, P.M., and .D. Jorgenson. 1983. Identification of porcine transmissible gastroenteritis virus in house flies (<i>Musca domestica</i> Linnaeus). <i>American Journal of Veterinary Research</i> 44(11):2078-2082.
Salmonella infection	Salmonella	Barber, D.A, P.B. Bahnson, R. Isaacson, C.J. Jones, and R.M. Weigel. 2002. Distribution of <i>Salmonella</i> in swine production ecosystems. <i>Journal of Food Protection</i> 65(12):1861-1868.
Senecavirus infection	Senecavirus	Allison G., P. Gauger, et al. 2018. PEDV, PRRSV, and Seneca Valley virus PC positive flies (<i>Musca domestica</i>). What now? <i>Proceedings of the 49th American Association of Swine Veterinarians Meeting</i> .
Streptococcus suis infection	Streptococcus suis Type 2	Enright, M. R., T.J. Alexander, and F.A. Clifton-Hadley. 1987. Role of houseflies (<i>Musca domestica</i>) in the epidemiology of <i>Streptococcus suis</i> type 2. <i>The Veterinary Record</i> 121(6):132-133.



Clarify, Captivator and Starbar are a registered trademarks of Central Life Science

Courtesy of Mike Catangui, Ph. D, Central Life Science

Discussion

Under the conditions of this study, flies may be a fomite with the ability to indirectly transmit PEDv to swine. These data suggest infectious PEDv was present within or on flies that entered the liquid traps transferring PEDv to the attractant. The negative control trap liquid, in the same airspace, was negative and did not infect the pigs further suggesting flies were responsible for transporting PEDv into the liquid fly attractant. The exact route of indirect transmission is unknown; however, it is speculated flies exposed to PEDv in feces from infected swine may transport the virus to feed when pigs may be exposed to the virus or the flies may be consumed by swine.

As flies reproduce in warm, moist conditions, the interface between PEDv positive feces and flies may provide the ideal environment for virus exposure either on the flies or what may be consumed by flies. In 2016, Tun *et al.*⁴ reported PEDv could survive up to 9 months in infected lagoons. Likewise, Verma *et al.*⁵ determined that PEDv could remain infectious ≥ 28 days in a manure slurry stored at various temperatures.

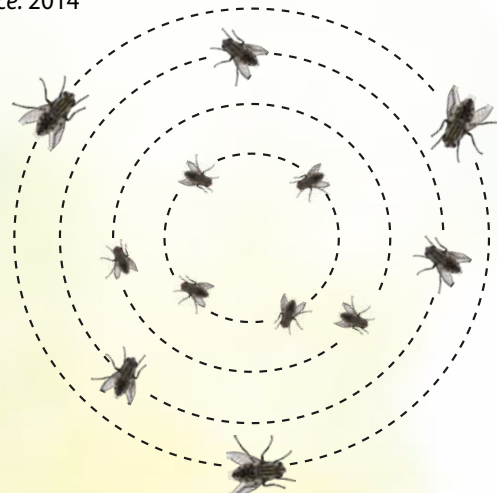
These data suggest flies may indirectly transmit PEDv to feed, water, or surfaces in contact with swine as opposed to pigs consuming quantities of flies sufficient to transmit PEDv.

However, flies are continually present on feed and/or water in swine facilities or physically present on the backs, ears and noses of swine in large numbers. Therefore, transmission of PEDv via flies through contact with feed, water or physical contact with swine may serve as the vector to transmit the virus and mimics the bioassay positive liquid attractant.



References

- Otake S, Dee SA *et al.* Transmission of porcine reproductive and respiratory syndrome virus by houseflies, (*Musca domestica* Linnaeus). *Vet Rec* 2003. 152: 73-76
- Allison G, *et al.* PEDV, PRRSV, and Seneca Valley virus PCR positive flies (*Musca domestica*). What now? *Proceedings 49th AASV 2018*. 394-396
- Ketchum R, Rix M *et al.* Hog producers can take steps to survive in low markets. *National Hog Farmer* 11-07-16
- Tun HM, Cai Z, *et al.* Monitoring Survivability and Infectivity of Porcine Epidemic Diarrhea Virus (PEDV) in the Infected On-Farm Earthen Manure Storages. *Frontier Microbiol.* 2016:7:265
- Verma H, Erber J, *et al.* Survival of Porcine Epidemic Diarrhea virus in environmental samples. *Proceedings Allen D. Leman Swine Conference*. 2014



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Staying on the Cutting Edge Keeps Us Focused on Pig Health, Pig Comfort and Pig Production



Bruce Livingston

At an early age, Bruce Livingston knew he wanted to raise pigs for a living. When he was 8 years old, his father, Ed, and an uncle, Cal, gave him six breeding gilts in payment for helping them with their swine enterprises near Mahaska, KS. He also won a gilt for placing first in a 4-H judging contest. By the time he graduated from high school in 1987, Livingston owned a 150-sow farrow-to-finish operation outright. He had his mind set on his future in the hog business, so he never considered college.

Today, Livingston oversees Livingston Enterprises, Inc. (LEI), one of the largest, family-owned pork producers in Nebraska. Ranked at #27 in *Successful Farming's* Pork Powerhouse biggest swine operations in the country, Livingston has been in the swine production business for more than 40 years. With corporate headquarters in Fairbury, NE, all of Livingston's 14 swine production facilities, including six sow farms totaling 35,000 sows, produce over 1.2 million weaned pigs annually.

"I look specifically to Tom Petznick, DVM (KSU '95) of the swine-specific practice, ArkCare, in Fairbury, NE, to keep me up to date on any new disease challenges, new vaccines and new technologies I can implement in my system," says Livingston. "Additionally, he is our adviser on all things related to health and





The Livingston Family: Lucas, Bruce, Trudy, Elliana, Connor and Bryn



pig flow. I rely on him to keep me focused on animal welfare issues, incorporating new drugs and nutraceuticals that are safe for my pigs and the consumers we sell our meat to. His expertise in pig production is invaluable to our overall success."

"With the tremendous ebb and flow of this business," Dr. Petznick outlines, "if you aren't producing the healthiest pigs per sow possible, you won't be in business long. Bruce and his team members work hard to maintain the pig flow necessary to fill in the gaps for large systems looking

Tom Petznick, DVM

for high-quality market pigs, as well as fill the need to bring consistent, high-quality pork to the industry. The last three years have been brutal, but those who stayed consistent and did not have big disease breaks, are reaping the current market rewards."

Dr. Petznick adds, "I have been fortunate to work with Bruce and Trudy Livingston and watch them grow from a 2,200-head breed-to-wean facility to over 35,000 sows producing more than 1 million weaned pigs a year. Bruce has the same passion for


raising pigs as my smaller independent producers," he states. "Being able to provide answers when needed is critical to my business. That requires a lot of education, constantly seeking CE courses and working daily with these producers. I do a lot of PQA audits and paperwork as well as assist in training new employees and key position recruiting. It's not all veterinary work, but it's the role producers like Bruce Livingston critically need."

Dr. Petznick says producers are constantly wanting the newest and best technologies available. However, he says in many cases it's just going back to some of the older, proven products is the right answer. He points to his use of Aurora Pharmaceutical's swine enhancement products as excellent examples.

At 52 years old, younger men aren't going to outwork Livingston. Up most mornings at 4:00 a.m., he is the definition of a hands-on manager. "I have always made it a priority to know what's going on in every facility," says Livingston. "I've always been focused on doing everything right for each individual pig and making sure every pig is dried off as soon as it's born. It's critical to keep our weaned pig number high. The weaned pig numbers dictate the success of our business."

He adds, "With Dr. Petznick's help in keeping our disease challenge to a minimum, we're currently (and consistently) weaning 13.5-13.7 pigs weaned per sow. We've hit 13.9 before, and my goal remains to hit 14 pigs/sow/live. We're at 34 pigs/sow/year right now on 35,000 sows. We think 36 or 37 pigs/sow/year is totally doable and in some of our systems, we're seeing those numbers."

Livingston uses benchmarking software to see how good their production numbers stack against the industry. In 2021, out of 958 farms in the benchmark database, we had a #1, #4, #9, #13 and #30, and he adds, that's with us dealing with PRRS in a few of the units.

In conclusion Livingston states, "This is a very stressful industry. I don't know of any other (agricultural) industry that has as much stress to contend with as the swine industry. It's great to see that we are starting to regain profitability after last year's losses resulting from COVID." 



Tiamulin

Still a Good Treatment Option for Swine Veterinarians

By: Grant Weaver, DVM
Swine Technical Services Veterinarian
Aurora Pharmaceutical, Inc.



Since 1993 tiamulin has been a valued treatment option for veterinarians fighting both respiratory and enteric disease in swine. Tiamulin is a semi-synthetic derivative of pleuromutilin and is used exclusively in veterinary medicine in the United States. The pleuromutilins, of which tiamulin is a member, are natural antibiotic substances produced by the fungus *Pleurotus mutilus*, more recently called *Clitopilus scyphoides*.

Tiamulin was first approved in Europe for use in veterinary medicine in 1979 and was first approved for use in swine in the U.S. in 1993. It works in the cell as an antibacterial agent by binding at the 50-S ribosomal subunit location called the peptidyl transferase center, which is where amino acids are linked together to produce proteins.

By binding at this location, it inhibits peptide bond formation making the cell unable to produce proteins. Cellular growth is inhibited due to the cell not being able to repair its protein structure.

They (pleuromutilins) are active against gram-positive bacteria such as *streptococci* and *staphylococci*, anaerobic bacteria and mycoplasmas; they have been used for decades in veterinary medicine for the control of respiratory and intestinal infections in different animal species, especially in pigs and to a lesser extent in poultry and rabbits (in Europe).

In the United States, tiamulin is labeled for the treatment of swine dysentery associated with *Brachyspira* (formerly *Serpulina* or *Treponema*) *hyodysenteriae* susceptible at a dosage of 3.5 mg per pound of body weight daily and for the treatment of swine pneumonia due to infection with *Actinobacillus pleuropneumoniae* susceptible at 10.5 mg per pound of body weight daily.

Generally, tiamulin is indicated in Europe for the treatment and prevention of swine dysentery (*Brachyspira hyodysenteriae*), treatment of colitis (*Brachyspira pilosicoli*), treatment of


ileitis (*Lawsonia intracellularis*) and treatment of enzootic pneumonia (*Mycoplasma hyopneumoniae*), but label approval can vary by country. It also has label approval for indications in poultry and other species.

Active tiamulin has been shown around the world to be effective at achievable tissue levels against a broad range of swine pathogens including *P. multocida*, *S. suis*, *B. bronchiseptica*, *A. pleuropneumoniae*, *B. hyodysenteriae*, *M. hyopneumoniae*, *M. hyosynoviae*, *M. hyorhinis*, and *L. intracellularis* (intra MIC).

The 2020 susceptibility profile of porcine pathogens received at the ISUVDL showed tiamulin as being very effective against *A. suis*, *A. pleuropneumoniae*, *C. perfringens*, *E. rhusiopathiae*, *G. parasuis*, and *S. suis*. Also, just above 50% of the *P. multocida* type A and *Staphylococcus hyicus* isolates tested were also sensitive.

Tiamulin continues to be widely used against both respiratory and enteric pathogens. In addition to effectiveness against the labeled disease agents *B. hyodysenteriae* and *A. pleuropneumoniae*, it can be used against other susceptible agents in cases where a valid VCPR exists and there is sufficient medical evidence that would indicate its use.

During my years in practice, we found it to be a good treatment option when fighting *G. parasuis*, *Mycoplasma lameness*, *Enzootic pneumonia* due to *M. hyopneumoniae*, *Ileitis*, and *Brachyspiral colitis*. Recently published clinical studies have continued to find it effective.

The timely use of effective antibiotic treatment protocols are an important part of the process in minimizing nursery-finish mortality in today's swine farms. Disease challenges continue to be a concern for swine farms of all sizes. Treatment protocols based on veterinary herd examination and diagnostic results are valuable in allowing farms to use all tools available to combat important swine pathogens. 



Aurora Pharm New TiaGard™ 12.5

Aurora is pleased to announce the immediate availability of new TiaGard™ 12.5% (tiamulin hydrogen fumarate), a liquid concentrate antibiotic that is effective in the treatment of swine dysentery and swine pneumonia.

TiaGard 12.5% is comprised of the active ingredient tiamulin hydrogen fumarate and continues to provide effective and economical choices to swine producers as they seek economical animal health solutions.

TIAGARD™ 12.5% DOSING CHART			
PIG WEIGHT	WATER INTAKE	SWINE DYSENTERY	SWINE PNEUMONIA
		# OF PIGS	# OF PIGS
20 LBS.	0.3-0.5 GAL.	1,786	595
45 LBS.	0.4-1.1 GAL.	794	265
75 LBS.	0.7-1.5 GAL.	476	159
125 LBS.	1.0-2.0 GAL.	286	95
180 LBS.	1.2-3.0 GAL.	198	66
SUGGESTED FINAL DILUTION		SWINE DYSENTERY	SWINE PNEUMONIA
1/2 BOTTLE (0.5L)		275 GAL.	92 GAL.
1 BOTTLE (1L)		550 GAL.	183 GAL.
3 BOTTLES (3L)		1,650 GAL.	550 GAL.

Caution: Do not use undiluted. Do not use in animals other than swine. The effects of tiamulin on swine reproductive performance, pregnancy and lactation have not been determined.

Contraindications: Swine being treated with TiaGard™ 12.5% (tiamulin) should not have access to feeds containing polyether ionophores (e.g., lasalocid, monensin, salinomycin and semduramycin) as adverse reactions may occur.

The label contains complete use information including cautions, warnings and withdrawal times.

Always read and follow the label and use directions.



TiaGard™ 12.5% (tiamulin hydrogen fumarate)

Aurora Pharmaceutical Adds 12.5% Liquid Concentrate

According to Bob Rehurek, Director of Sales and Marketing for Aurora Pharmaceutical, "TiaGard is a true equivalent to pioneer Denagard® (tiamulin hydrogen fumarate) and will be labeled for quick, whole-herd treatment against both swine dysentery and swine pneumonia with a wide margin of safety. TiaGard will be available in an easy-to-measure and pour plastic 1-liter bottle followed with a price-competitive 5-liter plastic jug."

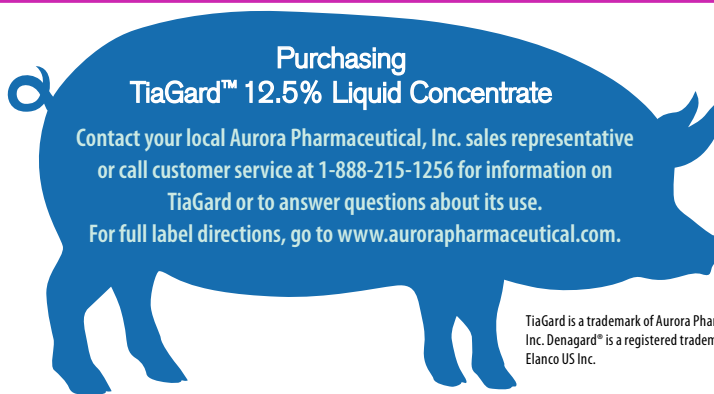
When administered in drinking water for five consecutive days, tiamulin hydrogen fumarate is effective for the treatment of swine dysentery associated with *Brachyspira hyodysenteriae* (formerly *Serpulina* or *Treponema*) and for treatment of swine pneumonia due to *Actinobacillus pleuropneumoniae*.

"Pork producers and veterinarians have been requesting that Aurora develop this water-applied antibiotic and bring it to the market at a reasonable price," says Grant Weaver, Swine Technical Services Manager for Aurora. "Aurora is known for their strong solutions manufacturing background and is now offering a USA-based manufactured product for a far more competitive and margin-positive price to veterinarians and pork producers."



TiaGard™ 12.5% Liquid Concentrate Product Benefits

- True equivalent to pioneer Denagard® (tiamulin hydrogen fumarate) at a fraction of the cost per head.
- Active against *Brachyspira* (formerly *Serpulina* or *Treponema*) *hyodysenteriae* and *Actinobacillus pleuropneumoniae*.
- Fast acting with a wide margin of safety.
- Approved for use in medicated proportioners . . . no needles required, meets PQA standards.
- High potency, low resistance tiamulin hydrogen fumarate is widely considered to be the most effective antimicrobial against swine dysentery caused by *Brachyspira hyodysenteriae*.^{1,2}
- Economic impact varies based on the severity and prevalence of the disease within an operation. The combination of treatment costs and death loss can cost producers thousands of dollars a year. A significant portion of that loss also comes from low average daily gain. It is estimated a producer loses between \$11 and \$17 for every infected animal.³
- One liter (1,000 mL) of TiaGard Liquid Concentrate will medicate 550 gallons of drinking water at 227 mg per gallon for treatment of swine dysentery or 183 gallons at 681 mg per gallon for treatment of swine pneumonia.
- Five-day dosing in drinking water with no age restrictions enables quick, effective, whole-herd treatment against both dysentery and swine pneumonia.
- Readily absorbed from the gut and can be found in the blood within 30 minutes after dosing.
- Short withdrawal time after use (3 days before slaughter after treatment at 3.5 mg per pound and 7 days before slaughter following treatment at 10.5 mg per pound body weight).
- Manufactured and packaged in the USA . . . no product shortages or added costs due to international production, shipping, inspection and repackaging.



Purchasing TiaGard™ 12.5% Liquid Concentrate

Contact your local Aurora Pharmaceutical, Inc. sales representative or call customer service at 1-888-215-1256 for information on TiaGard or to answer questions about its use. For full label directions, go to www.aurorapharmaceutical.com.

TiaGard is a trademark of Aurora Pharmaceutical, Inc. Denagard® is a registered trademark of Elanco US Inc.

References

1. Wilberts BL, Arruda PH, Warneke HL, Erlandson KR, Hammer JM, Burrough ER. Cessation of clinical disease and spirochete shedding after tiamulin treatment in pigs experimentally infected with "Brachyspira hamptonii". *Res Vet Sci*. 2014;97(2):342-348.
2. Krasucka D, Mitura A, Cybulski W, et al. Tiamulin hydrogen fumarate—veterinary uses and HPLC method of determination in premixes and medicated feeding stuffs. *Acta Pol Pharm*. 2010;67(6):682-685.
3. Almond, G., Eads, K. and Keffaber, K. 2006. "Assessment of the Therapeutic Effect of Tilimicosin in Lactation Feed." *Proc. 19th IPVS Congress*: 523.



Persistence an

Makes Ocala-Based Equine Practitioner Perfect Fit for

When the World Equestrian Center (WEC) in Ocala, FL, opened its doors to competitive equine competitions, one of the first calls the owners made was to Larry Wexler, DVM (U of FL '04), owner of Wexler Equine to be the WEC's official veterinarian. "I jumped at the opportunity to work at these state-of-the-industry facilities and to oversee the health of the world-class horses that will be competing here," states Dr. Wexler. "I started in January (2021), primarily looking after the health of the hunter/jumpers and dressage horses performing. That's 20-30 weeks out of the year, so it's quite a responsibility."

Dr. Wexler is a self-proclaimed "late bloomer" in that he decided (after a stint of cowboying) to go to veterinary school at age 30. "I had the unique opportunity immediately out of veterinary school to work for the Ocala Equine Hospital (Ocala). I enjoyed working on thoroughbred horses, but quickly found myself gravitating towards the hunter/jumper type cases. I had the chance in 2009 to work with Robert

Barber, DVM (U of TN) at his predominantly hunter/jumper practice in Ocala until 2012 when it was time to go out on my own. That's when I formed Wexler Equine and worked as mainly an ambulatory practice in the Ocala area. When Dr. Barber decided to retire and sell his practice, I was asked to be the official veterinarian at the HITS Ocala Winter Circuit. I did that for three years before being asked to take over the same position at WEC."

As an ambulatory veterinarian and the former resident veterinarian at the HITS where he was on-call for more than 2,000 hunter/jumpers and dressage horses a year, Dr. Wexler has the hands-on experience needed to be the WEC's horse show veterinarian.

"My practice is predominantly hunter/jumpers, so I have a lot of experience dealing with various performance lameness issues as well as colics, pre-purchase exams and general physical therapy issues. These horses coming into the equestrian centers and shows are performing at such a high level, they require specialized maintenance."



Larry Wexler, DVM

And the WEC will be able to handle any medical issue that comes up. "They are still building the 41,000 sq. ft. veterinary center," outlines Dr. Wexler, "however, when completed, it will be state-of-the industry, complete with digital ultrasound and digital radiography, CAT scan, standing MRI, PET scan, underwater treadmill, cold water spa, salt therapy and vibration therapy. This will greatly enhance the care and therapy




World Equestrian Center Show Veterinarian

of these equine athletes coming in to perform. The facilities, when completed, will be like nothing seen in the performance horse industry."

Dr. Wexler deals with a wide variety of low-grade infections, skin dermatitis, scratches, cuts, and swollen legs in these highly transient horses. "We've tried everything on the market, and nothing clears them up like Equisul-SDT® (Sulfadiazine/Trimethoprim)," assures Dr. Wexler. "The SMZ tablets are so inconsistent and just don't work for me. My regular clients just ask for Equisul-SDT by name because they know it's easy to administer and it works. When horse owners or trainers ask me for SMZ tablet, I reach for Equisul-SDT instead."

Dr. Wexler says the only drawback to his dream job is that he's so busy it has affected his ability to race. "I race a Porsche Cayman in amateur club racing," he smiles. "I started racing back in 2019 to break up the daily grind. When I started racing, I would try and schedule races to coincide with client visits. It still allows me to prac-

tice and see my clients on a regular basis, yet allows me to pursue a hobby I've come to really enjoy."

In conclusion the veterinarian adds, "My dad took me to the Indy 500 when I was 15. You hear the cars; you smell the fuel and it either grabs you or it doesn't. Well, it grabbed me in a big way. Six years ago, I went to a Driver's Education class and been racing ever since. It's a great way to relax and forget about your day job for a weekend. You can't be doing 165 mph and thinking about a colic horse. Racing and equine competitions are all about speed and endurance. I'm hooked on both." 





EQUISUL-SDT is a registered trademark of Aurora Pharmaceutical, Inc.
For product information and label directions, please visit www.aurorapharmaceutical.com





**The Cat House
on the Kings**[®]
FELINE RESCUE

FURRY FRIEND FACTS

 **Approximately 6.3 million companion animals enter U.S. animal shelters nationwide every year. Of those, approximately 3.1 million are dogs and 3.2 million are cats.**

 **Each year, approximately 920,000 shelter animals are euthanized (390,000 dogs and 530,000 cats).**

 **Approximately 4.1 million shelter animals are adopted each year (2 million dogs and 2.1 million cats).**

 **About 810,000 animals who enter shelters as strays are returned to their owners. Of those, 710,000 are dogs and 100,000 are cats.**



LARGEST NO--CAGE, CHOOSES REVOLT [®]

The inspirational spiritual leader Mahatma Gandhi once said, "The greatness of a nation can be judged by the way its animals are treated." No one epitomizes animal kindness more than Lynea Lattanzio who 28 years ago unselfishly dedicated her home, her property, her finances and her entire life to create The Cat House on the Kings (located on the Kings River), a no-kill, nonprofit sanctuary, rescue and adoption center for cats located outside Fresno, CA.

In those 28+ years, Lattanzio has rescued tens of thousands of animals from shelters, abusive homes and abandonment and has helped get thousands more spayed and neutered.

Her mission has never wavered: provide a no-cage, no-kill sanctuary for feral and abandoned cats and kittens for the



Beth Caffrey, communications manager and owner, Lynea Lattanzio

State of California, primarily serving the Central Valley; facilitate the adoption of cats (primarily), dogs and other rescued animals into safe, loving, healthy and permanent homes and to educate the public on how to become directly involved in improving the quality of animal welfare.

"My motto here is, 'If they don't have a home, at least they have a life,'" says Lattanzio. "All of our cats are available for

THEY'VE SAVED OVER 7,100 DOGS



THEY'VE SAVED OVER 40,000 CATS

NO-KILL CAT SANCTUARY TO PROTECT THEIR 700+ FURRY GUESTS

🐾 **A cat doesn't care if you are smart or dumb, give him your heart and he will give you his.** 🐾

Abraham Lincoln

adoption. We do our utmost to find the best possible homes for our cats; none are euthanized except to relieve suffering. The cats live out their lives in our sanctuary until they are either adopted or die of old age — however long that may be. Every year, The Cat House adopts out approximately 500 cats (and some dogs).”

The cats and dogs come from emergency rescues, found as strays, rescued from open door shelters, surrendered by owners, etc. They also have relationships with many other rescue organizations to reduce the population in the central valley, so sometimes they are transferred in as others are transferred out, and unfortunately, a few rescues have had to close so they have worked with them and taken in animals they couldn't place.

“We have an exchange program with other no-kill shelters. They bring unadoptable cats (i.e., fighters, biters, sprayers, those that are timid or antisocial, etc.) to us and we provide them with adoptable adult cats or kittens,” adds Lattanzio.

THEY'VE SPAYED AND NEUTERED MORE THAN 56,000 ANIMALS

According to Beth Caffrey, The Cat House Communications Manager, “We are best known for their sanctuary, where more than a 45-person staff of mainly volunteers, care for over 700 unwanted cats and kittens. Individuals surrender their cats to us (for a fee), and we provide lifetime support and care.

Upon arrival at The Cat House, every cat is given any necessary medical care, and is spayed/neutered and vaccinated. They are then placed in cottages where they can become familiar with their surroundings. Once they're comfortable with their new digs, they are released onto the fully fenced and secure sanctuary grounds where they can roam about freely.”

“Since our founding, The Cat House on the Kings has saved over 40,000 cats and 7,100 dogs (not counting the 56,000 animals we have spayed and neutered) and currently cares for more than 700 cats and kittens, a dozen or so dogs and dozens of peacocks,” smiles Lattanzio.

“We are the largest no-kill, no-cage shelter in the world. We also provide a discounted neuter/spay program for the community. To date we have helped to fund and facilitate more than 56,000 spays/neuters helping our community. We plan to



Continued on page 20

THE KEY

- Sometimes Even Above Medicine and Diagnostic Knowhow -

IS COMMUNICATION

Founded in 1963, Kalmbach Feeds, Inc., is a family owned, customer-driven, animal nutrition company located in Upper Sandusky, OH. And while Founder/CEO Paul Kalmbach and President, Paul Kalmbach Jr.'s corporate mission is to provide the best animal feed products to their customers; they are a company that gladly practices what they preach.

Not only do they provide animal nutrition rations and feeds to their food-producing customers, but they also feed the same ingredients to their own swine and pullet/layer birds.

According to staff veterinarian Jessica Higgins, DVM (The OSU, '17), Kalmbach has grown to now include seven feed mills in four states. "While we are primarily a feed business, we have two additional divisions – Kalmbach Swine Management and Kalmbach Poultry Management. The swine management division is dedicated to managing 35,000 sows and 1,000,000 market hogs annually," outlines Dr. Higgins.

"The poultry division focuses on niche markets consisting of antibiotic-free, free-range and organic layers. We currently oversee roughly 3 million pullets/layers of which 1.8 million are owned by Kalmbach. We also work with several regional conventional egg layers," she explains.

While the poultry health division is mainly managed by Dr. Higgins, veteran swine practitioner Lynette Holman, DVM (The OSU, '95), who has been with Kalmbach for 20 years, also helps oversee the swine division.

Dr. Higgins grew up raising poultry and swine, and even achieved the 4-H Expert Poultry Showman award at her county fair. She credits these experiences as the spark to her interest in poultry and swine medicine. Throughout veterinary school, Dr. Higgins assisted with field research in commercial layers for *Mycoplasma gallisepticum*, as well as flock management, and individualized poultry medicine at a veterinary clinic in Urbana, OH.



Jessica Higgins, DVM



"I was truly blessed to find a position at Kalmbach my junior year in veterinary school," she adds. "I knew my veterinary degree was not going to provide me with all the technical expertise I needed to oversee layers. That's why I immediately enrolled in a Post-Doctorate

Certification program in Avian Health & Medicine through the University of Georgia after I graduated, which was an online option and possible to do concurrently with my job at Kalmbach. This provided me with the industry-specific knowledge, diagnostics and feed management education I needed to hit the ground running when I joined Kalmbach as a staff veterinarian."

Now, Dr. Higgins' role as a poultry veterinarian oversees the health of conventional caged pullets and layers as well as non-conventional cage-free and organic pullets and layers. As a layer-focused poultry veterinarian, Dr. Higgins has a special emphasis in commercial layer disease diagnosis, management and prevention.

"I love the dynamics between the two species," says Dr. Higgins. "It's never boring and keeps challenging me and keeps me

focused on continually learning as much as I can to help both." Dr. Holman and Dr. Higgins separate the 14 different sow unit flows between themselves, so they have no cross-contamination issues. Both are responsible for specific sow units and the pig flow from each.


"I spend about two-thirds of my time with the sow units and the rest of my time I work with the pullets/layers," outlines Dr. Higgins. "I'm primarily





involved with more big picture health plans and issues affecting the layers, not as much day-to-day individual barn management. We are blessed at Kalmbach to have fantastic, highly trained and motivated swine and poultry service teams. I work directly with them in almost every facet of my job. We have training sessions, team meetings and work with them on their weekly health reports, etc. They are our eyes and ears in the barns and facilities.”

According to Dr. Higgins, the area that required a lot of work earlier in her career was learning and understanding the dynamics of the two industries. “While production is somewhat similar, the poultry business is completely different than the swine industry,” she offers. “There really isn’t a lot of emphasis on swine or poultry in vet school, that’s why the post-doctorate classes in poultry management and health were critical for me. They taught me things I never experienced in vet school and provided me a solid base, especially as it related to feeding, diagnostic test procedures, health issues, etc.”

Dr. Higgins concludes, “The key – sometimes even above medicine and diagnostic knowhow – is communication. This is not something they can easily teach in vet school. I was fortunate to come into a culture here at Kalmbach that focuses on communication. I remember Dr. Holman came to a swine production class in vet school and she said, ‘People don’t care how much you know until they know how much you care.’ It was something she repeated several times in her talk and I have never forgotten it. Her emphasis on that and Kalmbach’s focus has allowed me to better develop my communication skills and focus on caring for other’s opinions and advice.” 



Equine Internal Medicine Veterinarian Says ... Make Sure You're Not Overdosing Neonates

According to equine internal medicine specialist Elsbeth (Swain) O'Fallon, DVM, DACVIM, (CSU 2010, UC-Davis 2014) there are certain drugs approved for adult horses that can and should be reduced when treating neonates.

A huge part of Dr. O'Fallon's research is finding and defining standards for the neonate stage regarding dosing amounts and frequency of dosing drugs, especially as it relates

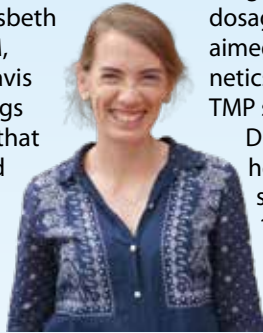
to neonates. "I've recently completed a few pharmacokinetic studies looking at drug influence on neonates," outlines Dr. O'Fallon. "I've also looked at gastric ulcer-related issues in foals and mares and many studies evolving around infectious diseases."

Part of her research on adult horse antibiotic use in foals, Dr. O'Fallon completed a study on metronidazole that supports a lower dose and lower frequency vs. the standard way equine veterinarians disperse the antibiotic in adult horses.

"Metronidazole is used primarily with other antibiotics to treat mixed bacterial infections in which anaerobic bacteria are present, for example, pleuropneumonia, peritonitis, and abdominal abscesses," says Dr. O'Fallon. "It also is used prophylactically after colic or other abdominal surgery when mixed bacterial infections are a risk. The biggest issue we are seeing with prescribing and using metronidazole in neonates and foals is toxicity and our study certainly supported the lower dose and lower frequency in neonates."

Because Equisul-SDT® (Sulfadiazine/Trimethoprim) is such a widely used antibiotic in equine (including neonates and foals), Dr. O'Fallon also did a pharmacokinetics study of the sulfadiazine and trimethoprim suspension in neonatal foals to determine if there is a reduced, or a more effective dosing regimen, of the popular sulfa antibiotic, while still maintaining protective MICs (mean inhibitory concentrations).

"Both Aurora and I wanted to know what dose the neonate could tolerate and still have/maintain protective/therapeutic MIC levels in comparison to adult equine," says Dr. O'Fallon. "There is limited investigation of neonatal foal pharmacokinetic parameters for sulfadiazine (SDZ) and trimethoprim (TMP). Neonates have unique pharmacokinetics, which may lead to adverse effects of



**Elsbeth O'Fallon
DVM, DACVIM**

drugs including dysbiosis when an adult dosage is used." The study was specifically aimed at investigating the pharmacokinetics of a commercially available SDZ/TMP suspension in healthy neonatal foals.

Dr. O'Fallon looked at six foals (24-36 hours of age) receiving the SDZ/TMP suspension (24 mg/kg, q12h, PO) for 10 days. Blood samples were collected at serial time points after the fifth dose (steady state) and at days 5 and 10 of therapy. Plasma concentrations were measured using liquid chromatography mass-spectrometry. Pharmacokinetic parameters were determined using one-compartment model.

All foals remained healthy with normal clinicopathologic findings. At 72-84 hours of age, mean Cmax Plasma was 37.8 ± 13.4 mg/mL (SDZ) and 1.92 ± 0.25 mg/mL (TMP). Mean Tmax was 1.4 ± 0.6 hours (SDZ) and 1.4 ± 0.4 hours (TMP). The mean Cmin for SDZ and TMP was 16.84 ± 8.46 mg/mL (SDZ) and 0.5 ± 0.24 mg/mL (TMP). Mean elimination half-life was 10.8 ± 6.1 hours (SDZ) and 6.5 ± 2 hours (TMP). Mean area under curve (AUC) was 667 ± 424 mg h/mL (SDZ) and 21.1 ± 5.3 mg h/mL (TMP).

"Neonatal foals achieved high plasma concentrations of SDZ and TMP," outlines Dr. O'Fallon. "Mean concentration of each remained above MIC (90) for *Streptococcus equi ssp.* (SDZ/TMP: 9.5/0.5 mg/mL) for all time points. Sulfadiazine and trimethoprim suspension appeared safe using adult dosage for neonates. Concentration levels reached well above target MIC for *Streptococcus spp.*


Dr. O'Fallon adds, "None of the foals on the regular dose of Equisul-SDT developed any negative clinical impact, i.e., diarrhea, blood count changes and they all stayed healthy throughout the 10-day trial. There didn't seem to be a negative impact from the higher dosing to the neonates even though they were being dosed much higher than the necessary levels to achieve protective MICs with the antibiotic."

The internal medicine specialist recommends, "If a practitioner is reaching for Equisul-SDT – because of a susceptible bacterial infection and they are in a region that is prone to enterocolitis related to sulfa antimicrobials – then one consideration would be to lower the Equisul-SDT*



dose from the approved adult dose of **2.7 mL/100 lb. to just 2 mL/100 lb.**, based on the plasma concentrations observed in this study. This dose would likely provide protective plasma levels against sulfa-susceptible bacteria, though culture and sensitivity would be needed to ensure susceptible organisms.

"This study did not investigate alternative doses and I can't recommend the same course of action with the human off-label sulfa tablets or powders because the dosage range is wide and we did not look at the off-label products, only the FDA-approved antibiotic," she adds.

In conclusion, Dr. O'Fallon states, "Depending on your treatment goals, if you have the acute neonate and are suspecting sepsis, it would probably be more appropriate to do some type of injectable antibiotic that's more broad coverage in nature. However, I recommend Equisul-SDT as an option for an oral transition antibiotic after injectable treatments to provide further coverage while the patient gets back on their feet. Other possible uses include *Streptococcus zooepidemicus* respiratory infections, umbilical infections or skin wounds caused by sulfa-sensitive bacteria," she concludes. 

*Equisul-SDT® is not currently FDA-labeled for reduced dosing rates in horses. See label for full dosing recommendations.
Equisul-SDT is a registered trademark of Aurora Pharmaceutical, Inc.





By: Mike Strobel, DVM, MS,
President/CEO
Aurora Pharmaceutical, Inc.

FINAL THOUGHTS

Why is FDA guidance #256 good for the animal health industry, veterinarians, consumers and ultimately the animals?

Veterinarians want to be able to take care of and effectively treat our patients. We face a myriad of challenges to do that every day in practice. Our patients are not just dogs, cats, horses, and food animals. We literally potentially treat every animal other than humans.

The result of these realities is there will never be an FDA approved or indexed drug for all these uses. In 1995 AMDUCA (Animal medicinal drug use clarification act) was passed to legalize the reality of extra-label use of approved drugs and compounding from those same approved drugs.

It did not codify compounding from bulk API (Active pharmaceutical ingredients) ingredients. Guidance #256 is intended to clarify the FDA position on when and if regulatory discretion will be used in animals.

Bulk drug compounding has been expanding steadily since it became a legal practice in humans. This same benefit has never been extended to animals. Until now, it has been tolerated by the FDA because there was no good mechanism to regulate it and unfortunately the FDA didn't have the funds or manpower to achieve compliance with the law.

Moreover, the States boards of pharmacy and veterinary medicine have inconsistent laws and oversight regulating both professions about what is and isn't allowed. I believe this guidance will help bring consistency and clarity for all the parties involved.

Is this guidance bad for our patients? I don't think so. It will require us to better document our rationale for using compounded drugs. It will not allow us to use compounded drugs when approved products are available. Many people may not realize that 80 percent of animal bulk compounding of drugs is essentially copies of approved drugs or done for reducing cost not improving patient outcome.


I believe this is what the FDA is trying to prevent because it reduces the likelihood of new drugs getting approved and cheaper generic drug approvals.

So, what is the bottom line. This guidance will reduce the number of compounded medications made from bulk API ingredients available in the marketplace. It will force compounders to start with approved human and animal medications which include the active ingredient.

As a manufacturer of FDA-approved products, I can tell you that the safety and quality built into FDA approved products is significant compared to bulk API ingredients. APIs are manufactured all over the world.

Most do not meet FDA standards and compounders have no requirement to choose those that do. I have personal knowledge of Chinese, Indian and European API manufacturers selling lots that fail testing into the U.S. compounding industry. We need to be careful to protect our patients and starting with FDA and USP approved ingredients is a terrific way to do that.

I encourage everyone to follow this guidance as it will result in better medications for our patients and more approved products.

I appreciate all of you who use and support Aurora products. My whole team is looking for ways to make it easy for you to do business with us. I believe you should be treated like I want to be treated and I make sure everything we do at Aurora Pharmaceutical is in that spirit. We look forward to bringing new products to market this year and in the future with your continued support. 

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For full prescribing information for EQUISUL-SDT®, Revolt® or any Aurora product, please see the package inserts on our website, www.aurorapharmaceutical.com

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Christine Cordova, RVT

build a spay/neuter clinic on newly purchased property located adjacent to our Sanctuary, so that we can expand spay/neuter, the real solution to pet overpopulation.”

Christine Cordova, a registered Veterinary Technician (RVT) with San Juaquin Vet Clinic in Fresno works full time at the Cat House.

“Aubrey Alfaro, DVM (KSU ‘04) and I work closely with consulting veterinarian Dr. Luzminda (Luz) Piel, New Village Pets Veterinary Clinic in Selma, CA, dealing with upper respiratory infections, diarrheas, vaccinations, fluid therapy, nebulizing treatments with sa-

line, etc. We have our own Idexx lab here and do our own blood work, diagnostics, etc.”

After learning about **Revolt® (selamectin) Topical Parasiticide for Dogs and Cats** at a national veterinary meeting, Cordova immediately contacted Aurora salesperson Jessica Hager for more information.

“We like that it was a generic Revolution®, was set up in the same dosing as Revolution, but was a *third of the cost*,” says Cordova. “We survive off donations, so any cost cutting we can do without compromising the health of our cats, is what we gravitate towards. Revolt fit that need to a tee. Due to our climate and the fact that we are surrounded by all kinds of wildlife, fleas are a year-round issue. We love the fact that by using Revolt we do not need to worry about fleas, ear mites, mange, ticks and heart-worm prevention. It really allows us to focus on the other medical needs of everyone in our care.”

In conclusion, Lattanzio confesses, “My major objective is to be put out of business because that means we have reached the goal of a no-kill nation, where pets are provided for and not euthanized due to no options. Until we



reach that goal, we would like people to know that we are here and that all pets – regardless of circumstances – are welcome here.”



Donated supplies