

TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
April 2022 – Volume 42 – Issue 4



EXTENSION

<i>In this edition...</i>			
Asian Longhorned Tick and <i>Theileria orientalis</i>	Page 1	Interest Rate Discussion	Page 3
Obese Equine	Page 2		

Asian Longhorned Tick and *Theileria orientalis*

Barry Whitworth, DVM Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

The month of April is normally associated with increased temperatures and humidity. (At the writing of this article, most of Oklahoma was in a drought, so I hope that the April showers do come.) Unfortunately, with these changes in the weather, a pesky pest emerges called the tick. Ticks can transmit diseases, cause skin irritations, and in severe infestations cause anemia and even death. A new tick to the United States (US) that continues to migrate across the country is the Asian Longhorned Tick (ALT).

In 2017, the United States Department of Agriculture's National Veterinary Services Laboratories (NSVL) confirmed the presence of *Haemaphysalis longicornis* which is commonly referred to as the ALT or bush tick. Some data indicates that the tick may have been in the US since 2010. Since the tick's initial discovery, the ALT continues to move across the United States. According to the Center for Disease and Control and Prevention (CDC), the ticks have been found in 17 states which are Arkansas, Connecticut, Delaware, Georgia, Kentucky, Maryland, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Virginia, and West Virginia (CDC, 2021). Fortunately, the tick has not been found in Oklahoma. According to Dr. Justin Talley, department head/professor of Entomology and Plant Pathology at Oklahoma State University, if the Asian longhorn tick is ever found in Oklahoma, he believes the tick will live east of I-35.

The ALT can be found on people, pets, livestock, and wild animals. The tick resides in areas high in humidity such as tall grass and wooded areas. The female tick can reproduce without having to mate with a male tick. These females are capable of laying very large numbers of eggs which can result in large populations of ticks in pastures or on animals in a short period of time. Infestation is stressful to the animal and may compromise growth and production. In severe infestations, severe blood loss may result in death.

As the tick continues its westward migration, the tick may cause production issues in cattle as well as a cattle disease called Theileriosis. *Theileria orientalis* genotype Ikeda is a hemoprotozoan. A hemoprotozoan affects red blood cells and leukocytes. *T. orientalis* genotype Ikeda has been associated with severe bovine disease in other countries. A recent study in the US demonstrated that a U.S. population of the invasive ALT is capable of transmitting *T. orientalis* Ikeda genotype (Dinkel et al., 2021). The particular strain of *T. oreintalis* genotype Ikeda used in the study was isolated from a beef herd outbreak of Theileriosis in Virginia in 2017(Oakes et al., 2019). Although not conclusive, this study provides strong evidence that the outbreak of Theileriosis in the cattle in Virginia was most likely caused by Asian Longhorned ticks infected with *T. oreintalis* genotype Ikeda.

Most cattle infected with Theileriosis do not have clinical symptoms. If cattle are ill with Theileriosis, the typical clinical signs are fever, weakness, anorexic, and exercise intolerance. If cattle are forced to move, they may stagger and gasp for air. If stressed too much, the cattle may collapse and die. When examining cattle, the gums, eyes, or vaginal mucosa may appear white or yellow in color. Reproductive losses including stillbirths and late term abortions may be seen as well as reduction in milk production (Spickler, 2019).



Anaplasma marginale and *T. orientalis* genotype Ikeda both display similar clinical signs. One difference that has been noted in the two diseases is *A. marginale* infected cattle usually display aggression and *T. orientalis* genotype Ikeda do not. Another difference is that calves with Theileriosis can have clinical signs of the illness which does not usually happen with anaplasmosis. Still, a laboratory test would have to be performed to differentiate the two diseases.

In other countries, therapies have been developed to treat this organism. Unfortunately, no approved treatments are available in the United States. Clinically ill animals are given supportive care. Since vaccines are not available for this disease, the best defense against Theileriosis is to follow a good biosecurity program, control ticks, and provide animals with good nutrition. One key element of biosecurity is to isolate new purchases. During this time, animals should be observed for any signs of disease and treated for parasites. Controlling ticks usually requires a combination of insecticide treatments. In addition to insecticides, pastures need to be managed to reduce tick numbers. This requires producers to rotate pastures to avoid wooded and brushy areas when tick numbers are high. In addition to pasture rotation, practices such as long-term control burning can significantly lower tick numbers (Gleim et al., 2014). Also, animals on a good plane of nutrition are better suited to fight off diseases and parasites.

As mentioned earlier in this article, the ALT has not been found in Oklahoma, but the tick has been found in two of our neighboring states. With the tick being found so near to Oklahoma and the fact that large numbers of cattle move from the southeast United States to graze on grass and wheat in our state, the tick and/or *T. orientalis* genotype Ikeda could easily be transported to Oklahoma with a load of cattle headed for grazing. With this in mind, livestock producers need to observe their cattle frequently for any signs of large numbers of ticks and any signs of illness. For more information about ALT and Theileriosis, livestock producers should contact their veterinarian or Oklahoma State University Agriculture Extension Educator. In addition, Oklahoma State University Extension has a fact sheet on ALT at <https://extension.okstate.edu/e-pest-alerts/site-files/documents/2018/longhorned-tick-bush-tick-haemaphysalis-longicornis-june-14-2018.pdf>.

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Obese Equine

Earl H. Ward, Area Livestock Specialist

I have recently inherited and brought home my father's twenty-year-old Quarter Horse gelding named Beau, or as I affectionally call him "Jughead." My father bought him as a weanling and was extremely proud of him. However, Beau has not had to work too hard in his life and was fed really well. I wouldn't call him obese, but he is "well taken care of."

TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
April 2022 – Volume 42 – Issue 4



EXTENSION

Even though I am a ruminant nutritionist, I am extremely lacking in equine nutrition knowledge. Now that I have Beau and a four-year-old filly, Scarlet, at the house I feel like I need to have a better understanding of equine nutrient requirements and balance.

Just like beef cattle, an equine's body condition score system is a scale from 1 to 9, with one being extremely thin and 9 being obesely fat. Again, like cattle a body condition score of 4-6 is ideal. I would say that my new noble steed is most likely a BCS 7. The American Association of Equine Practitioners says that an obese equine will have increased stress on the heart and lungs, greater risk of founder, increased bone and joint problems, worsened symptoms of arthritis, less efficient cooling of body temperatures, greater lethargy, and more easily fatigued. Funny how that is almost exactly what my doctor says about me.

When we look at any animals' ability to gain or lose weight, we need to know what their nutrient requirements are and the amount of nutrients being consumed. When looking at an equine's nutrient requirements we need to know the animal's mature weight; the type of horse it is such as a stallion, working animal, bred mare, lactating mare, or young horse; and other details based on the type of horse they are. I have no clue what this sorrel weighs but he isn't tiny. So let's assume that as an adult gelding Ol Beau weighs 1325 lbs with very minimum work load. With those perimeters the Nutrient Requirements for Equine says that he will need 1.43 lbs of crude protein (CP) and 9.1 lbs of total digestible nutrients (TDN) each day. It is also predicted that he would eat about two percent of his body weight in dry matter if the quantity is not limited. This translates to about 30 lbs of as-fed hay that would need to contain 5.4% crude protein and 34.3% total digestible nutrients just to maintain weight.

Currently Beau and Scarlet are nibbling on the grass available in the lot and I am giving them a couple flakes of hay as well as supplementing them with a couple pounds each of a 20% All-Natural supplement daily. Am I underfeeding or overfeeding them? Well, if I do the math I find that if I use my hay analysis from last year (8% CP and 58% TDN) that perhaps I am not feeding them enough. The math says that if I am feeding them 10 lbs of hay per day that I should be supplementing them with 6.6 lbs of my supplement.

If you have any questions on whether or not you are feeding your horse right, then contact your county's OSU Extension office and we will help find the answers. As for me and my chubby "Jughead," I will be watching his body condition and his eating habits this spring and summer and just might have him in peak physical condition soon.

Interest Rate Discussion

Scott Clawson, Area Ag Economics Specialist

Some positive pieces of information have been unearthed in eastern Oklahoma this spring. First, much-needed rain has been falling in eastern Oklahoma. Second, cattle and crop prices are generally higher year over year. In terms of cost of production, the rain and better prices will certainly help but if they can offset rising input costs is still to be determined. The newest addition to the team of misfit input costs is interest rates. Like with feed, fertilizer, fuel, etc. interest rates have a story to tell in 2022.

Where have we been and what happened?

It has been quite a while since interest rates were headline material. Speaking generally, it has been since before the economic turmoil in 2008 since interest rates were much of a discussion point. However, times and economic conditions change. The Federal Reserve System (the Fed) has two mandated goals regarding their monetary policy: maximum employment and stable prices. It is not breaking news that we are now dealing with inflation concerns. The response is that raising interest rates will slow down our economy and mitigate these price issues.

The specific interest rates that farmers and ranchers pay are not changed by the Fed but the underlying rates by which the financial system functions change as the Federal Funds Rate (FFR) is adjusted. The FFR is the rate at which banks lend

TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
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EXTENSION

funds to each other. We as ag producers don't conduct any business with the FFR but this rate influences other interest rates that we do consume. One of primary importance is the Prime Rate.

On March 16, 2022 the FFR was increased to a range of .25-.50% and the expectations were set to expect higher rates soon. <https://www.federalreserve.gov/monetarypolicy/files/monetary20220316a1.pdf>

What is the Prime Rate?

The Prime Rate is determined by banks themselves not the Fed. However, the FFR is considered the influencer of the Prime Rate that a bank offers. Many of our local banks will use something like the Wall Street Journal (WSJ) Prime Rate as a baseline for what rates are offered. The WSJ Prime Rate is an average rate based on a survey of some of the largest banks in the US.

The WSJ Prime Rate is 3.5% as of April 12, 2022. <https://www.bankrate.com/rates/interest-rates/wall-street-prime-rate/>

How can this impact farmers and ranchers?

As operating notes come due and as variable interest rate real estate loans are set to adjust, it is likely that our rates will be increasing. This will translate to much of our consumer credit like our auto loans and credit cards. Before renewal, it might be helpful to get out your loan docs and see if your loan is tied to a prime rate, especially those variable rate real estate loans.

A good source of information for the Fed Funds rate is shown below.

Board of Governors of the Federal Reserve System (US), Federal Funds Effective Rate [FEDFUNDS], retrieved from FRED, Federal Reserve Bank of St. Louis: <https://fred.stlouisfed.org/series/FEDFUNDS>, April 11, 2022.



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PRESS RELEASE

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March 31, 2022

Highly Pathogenic Avian Influenza Confirmed in Oklahoma Wild Birds

OKLAHOMA CITY, Okla. – A wild duck in Payne County is the first wild bird in Oklahoma to be confirmed to be infected with the Eurasian H5 type of highly pathogenic avian influenza.

“While Oklahoma has not seen HPAI in a backyard or commercial poultry flock this year, the finding of this single duck adds Oklahoma to a long list of states with confirmed cases of HPAI,” said Dr. Rod Hall, State Veterinarian for Oklahoma. “I encourage poultry owners of all kinds to continue to remain vigilant, practice good biosecurity and report sick or dying birds immediately.”

Symptoms of HPAI in poultry include: a decrease in water consumption; lack of energy and appetite; decreased egg production or soft-shelled, misshapen eggs; nasal discharge, coughing, sneezing; incoordination; and diarrhea. HPAI can also cause sudden death in birds even if they aren’t showing any other symptoms. HPAI can survive for weeks in contaminated environments.

This type of HPAI virus is considered low risk to people but can be very dangerous to poultry species which is an important part of Oklahoma’s agricultural industry.

“We’re asking that anyone involved with poultry or egg production, from large farms all the way down to backyard flock, review and implement their biosecurity practices to ensure the health and well-being of their flocks,” Dr. Hall said.

There have been no known cases of HPAI in domestic birds in Oklahoma, but the disease is continuing to infect domestic flocks throughout the northern and eastern United States. Since January of 2022, there have been 77 confirmed cases of HPAI in domestic flocks in the US.

Please report sick wild birds in Oklahoma to USDA Wildlife Services at 405-521-4039. Death or illness in domestic poultry species should be reported to the ODAFF Animal Industry Division at 405-522-6141.


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TIMELY TOPICS

OSU EXTENSION - NORTHEAST DISTRICT
April 2022 – Volume 42 – Issue 4



EXTENSION



Value of Gain Calculation

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OK Weighted Average Report 4/15/22

Weight	\$/lb	Value/hd	Added lb.	Added \$	\$/lb Added
324	\$ 2.3750	\$ 769.50			
378	\$ 2.1894	\$ 827.59	54	\$ 58.09	\$ 1.08
427	\$ 2.1228	\$ 906.44	49	\$ 78.84	\$ 1.61
469	\$ 2.0672	\$ 969.52	42	\$ 63.08	\$ 1.50
526	\$ 1.9928	\$ 1,048.21	57	\$ 78.70	\$ 1.38
576	\$ 1.8933	\$ 1,090.54	50	\$ 42.33	\$ 0.85
624	\$ 1.7564	\$ 1,095.99	48	\$ 5.45	\$ 0.11
675	\$ 1.6862	\$ 1,138.19	51	\$ 42.19	\$ 0.83
730	\$ 1.6076	\$ 1,173.55	55	\$ 35.36	\$ 0.64
776	\$ 1.5883	\$ 1,232.52	46	\$ 58.97	\$ 1.28
873	\$ 1.4813	\$ 1,293.17	97	\$ 60.65	\$ 0.63
918	\$ 1.4526	\$ 1,333.49	45	\$ 40.31	\$ 0.90

Long Stocker Run

Short Stocker Run

Heavy Stocker Run

Starting		Starting		Starting	
324	\$ 769.50	324	\$ 769.50	624	\$ 1,095.99
Ending		Ending		Ending	
918	\$ 1,333.49	526	\$ 1,048.21	918	\$ 1,333.49
Total Gain	Δ Value	Total Gain	Δ Value	Total Gain	Δ Value
594	\$ 563.99	202	\$ 278.71	294	\$ 237.49
VOG		VOG		VOG	
\$ 0.95		\$ 1.38		\$ 0.81	



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