Equine Renal Disease

The equine kidney has a vital role in overall health. Awareness of these diseases is important because of their impact on longevity and quality of life for horses. An ever-increasing number of horses have spread throughout the world. An ever-increasing number have spread into Germany.

Aside from what is known of the diversity and range of particular disease vectors in the USA, there is a need to be mindful of the possible introduction of a particular arthropod, e.g. tick or mosquito, that has never been recorded previously in the country in other areas. The potential impact and possible introduction of a novel disease or potential vector is serious. The potential impact of a particular arthropod on the health of humans and domestic animals in different countries is more relevant in today's world to consider population growth in the globalization of trade and the influence of climate change on our environment and the spread of novel arthropod-borne diseases. The potential impact of a particular arthropod on the health of humans and domestic animals in different countries is more relevant in today's world to consider population growth in the globalization of trade and the influence of climate change on our environment and the spread of novel arthropod-borne diseases.

An integral element to better prepare ourselves in dealing with a case/outbreak of a novel disease is the need for greater awareness and better education of practicing veterinarians. The article in this issue of the Journal of the American Veterinary Medical Association is intended to help veterinarians identify the tick that might be responsible for transmitting the disease to a horse.

At this time, the possible introduction of novel diseases is a concern for the horse industry. The potential impact of a particular arthropod on the health of humans and domestic animals in different countries is more relevant in today's world to consider population growth in the globalization of trade and the influence of climate change on our environment and the spread of novel arthropod-borne diseases. An ever-increasing number have spread throughout the world.

The potential impact of a particular arthropod on the health of humans and domestic animals in different countries is more relevant in today's world to consider population growth in the globalization of trade and the influence of climate change on our environment and the spread of novel arthropod-borne diseases.
Asian Longhorned Tick (Haemaphysalis longicornis): Challenges from an Invasive Ixodid Tick

Asian longhorned ticks (ALT) have small, darkly-budded bodies with no distinctive facial features to facilitate quick recognition. As a result, unfixed adults are smaller (3-6 mm long) than the familiar commonly encountered hard ticks. The initial confirmed identifications of ALT in the USA were based on specimens collected from a horse-oiled shop in New Jersey in 2017. This was the start of a new tick species in the USA in 50 years. However, subsequent investigation revealed that specimens removed from a dog in New Jersey in 2017, which were initially identified as the native solitary tick Haemaphysalis punctata, were also confirmed as ALT. The current tick has been confirmed for several years and has been reported in various states and regions.

The ALT, also known as the Asian longhorned tick (ALT), is a hard tick belonging to the species Haemaphysalis longicornis. It is native to China, Korea, and Japan, and it has been introduced to the United States.

The female Asian longhorned tick (ALT) (Haemaphysalis longicornis) is a small, darkly-budded tick with no distinctive facial features. It is native to China, Korea, and Japan, and it has been introduced to the United States.

The female ALT is approximately 3-6 mm long, and it is distinguished from the longhorn tick (Haemaphysalis longicornis) by its darkly-budded body and lack of facial features. Alt's eggs are fertilized internally, and all female ALT in the United States are rare. Male ALT in the United States are rare, and they are able to deposit about 2,000 eggs. ALT are able to deposit about 2,000 eggs. Male ALT in the United States are rare, and they are able to deposit about 2,000 eggs. They are not as common as the familiar commonly encountered hard ticks, and they are most active on warm, sunny days.

The ALT is native to China, Korea, and Japan, and it has been introduced to the United States. It is a small, darkly-budded tick with no distinctive facial features, and it is distinguished from other hard ticks by its darkly-budded body and lack of facial features. The female ALT is approximately 3-6 mm long, and it is distinguished from the longhorn tick (Haemaphysalis longicornis) by its darkly-budded body and lack of facial features. The female ALT is approximately 3-6 mm long, and it is distinguished from the longhorn tick (Haemaphysalis longicornis) by its darkly-budded body and lack of facial features.

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Asian Longhorned Tick (Haemaphysalis longicornis): Challenges from an Invasive Insect Tick

An aggressive beetle (TAR) koume small, reddish-brown bodies with no distinctive markings to facilitate quick recognition. As a result, adults, unlike small ones (3–8 mm long), are usually seen only in areas with the same family. The initial confirmed identification of TAR was in the USA based on specimens collected from a beehive-infested shop in New Jersey in 2017. It was then realized that it is the first detection of a new tick species in the USA in 50 years. However, subsequent investigation revealed that specimens removed from a dog in New Jersey in 2017 were indeed TAR. The species was then officially recognized in the United States. The TAR is now present in at least nine states, with multiple reports of TAR in the USA.

The TAR is typically found in wooded areas near the US–Canada border. It is also known for its preference for talk in the US and Canada, as well as for the USA. The TAR is a vector for several tick-borne diseases, including EHV-1 and EHV-4, which are related to equine herpesvirus. The TAR has a life cycle that involves three hosts: a host for feeding, a host for oviposition, and a host for egg hatching. The TAR is typically found in wooded areas near the US–Canada border. It is also known for its preference for talk in the USA.

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Asian Longhorned Tick (Haemaphysalis longicornis): Challenges from an Invasive Ixodid Tick

An introduced tick (ALT) known small, dark-bellied bodies with no distinctive markings to facilitate quick recognition. As in adult, adults are smaller (3 to 6 mm long) than the familiar commonly encountered hard ticks. The initial confirmed identification of ALT in the USA was based on specimens collected by a horned-rhino shop in New Jersey in 2007. This was thought to be the first discovery of a new tick species in the USA in 50 years. However, subsequent investigations revealed that specimens removed from a dog in New Jersey in 1999, which were previously identified as the northern bot fly Haemaphysalis punctata, are also ALT. The genera present for several years and has been reported from the United States, Europe, and Australia. ALT are common in tick-endemic areas in the United States, and the UK.

In the USA, the ALT has been confirmed in 14 states: New Jersey, New York, Pennsylvania, Maryland, Virginia, North Carolina, Ohio, Georgia, Alabama, Tennessee, Minnesota, Wisconsin, and Illinois. ALT have been confirmed in Canada, and the distribution of ALT is expected to expand to other locations, including the Pacific Northwest, Midwest, and Northeast.

ALT is a three-host tick with a life cycle that takes about a year. While males and females are capable of reproducing without male fertilization to rapidly grow local populations, females can deposit about 2,000 eggs, all female. Male ALT in the United States are rare. The ALT is a highly invasive species, able to reproduce without male fertilization to rapidly grow local populations. ALT can cause significant blood loss and stress to infested hosts.

The ALT is a highly invasive species, able to reproduce without male fertilization to rapidly grow local populations. ALT can cause significant blood loss and stress to infested hosts. ALT are known to feed on a wide range of hosts, including humans, and can transmit various pathogens, such as Babesia and Anaplasma. ALT are also known to be a vector for the Rocky Mountain spotted fever bacterium, Rickettsia rickettsii.

ALT are becoming more common in the United States, and it is crucial to monitor their spread and control their populations. Current research efforts are attempting to identify the genetic signatures of the disease causing tying-up in Thoroughbreds at the cellular level, hence there has been positive research efforts.

In the past two decades, “tying-up” up in athletic horses has proven frustrating to define despite the significant blood loss and stress to infested hosts. ALT are known to feed on a wide range of hosts, including humans, and can transmit various pathogens, such as Babesia and Anaplasma. ALT are also known to be a vector for the Rocky Mountain spotted fever bacterium, Rickettsia rickettsii. ALT are known to cause significant blood loss and stress to infested hosts. ALT are known to feed on a wide range of hosts, including humans, and can transmit various pathogens, such as Babesia and Anaplasma. ALT are also known to be a vector for the Rocky Mountain spotted fever bacterium, Rickettsia rickettsii.

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Asian Longhorned Tick (Haemaphysalis longicornis): Challenges from an Invasive Ixodid Tick

An invasive threat (ALT) has come to North America, and with it comes a significant economic and public health burden. The ALT is a hard tick that was first discovered in the United States in 2002. Since then, the tick has spread to multiple states in the Northeast and Midwest, causing significant economic losses to the livestock industry. The ALT is a vector for several important diseases, including theileriosis and babesiosis, which can have significant economic and public health impacts. The ALT is also known to be a vector for Anaplasma phagocytophilum, which can cause human illness. The ALT is a stealthy invader, as it is able to reproduce without male fertilization to rapidly grow its population. The ALT is also a significant blood loss and stress to infested hosts. This points to at least two distinct factors that allow the ALT to thrive in its new habitat.

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Escherichia coli, and Staphylococcus pyogenes. Lesions that comprised the congenital category included renal dysplasia, renal agenesis, congenital cysts or congenital hydronephrosis. While there have been proposed associations of heritability or environmental components for developmental renal abnormalities in some species (such as dogs and pigs), prior to the pathogenesis of these congenital lesions remains to be elucidated.

Significant nephropathy (kidney stones) were identified in 13 horses. The lesions comprised calculus or a mixture of calculus or stones with other materials. Calculuses were noted to have a tendency to extend up to the ureter. Development of nephroliths in the past has been associated with long-term losses. In addition, the kidneys of horses may have a tendency to become large in size. papillary (medullary crest) necrosis due to decreased blood flow, either increased or decreased, can have a significant impact on renal health.

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Within the realm of infectious diseases, it is essential to include infectious diseases in the spectrum of human and animal health in the country and context. In a global context with potential for transmission of humans and animals in different countries. In addition, the kidney has a vital role in overall function. A variety of diseases present in the country and context. The following are common conditions associated with the kidney:

NSAIDs (i.e. phenylbutazone/bute and flunixin meglumine/ Banamine) are routinely used in horses for pain management. NSAIDs work by inhibiting a specific group of enzymes, cyclooxygenase (COX), which subsequently reduces inflammation. Unfortunately, other detrimental effects of this pathway include decreased production of prostaglandins. Specific roles involved in the development of prostatic glandular structures associated with blood flow to the tissues. These structures are thought to house the kidneys in the development of renal failure. A major component of this discussion is the potential for transmission of human and animal diseases in the country and context. Within recent months, there have been reports of the introduction of invasive species of mosquito (Culex pipiens, Romania) into Spain and of ticks (Rhipicephalus sanguineus and Ixodes ricinus). Although the discovery of I. ricinus was made in the USA for the first time in 2018, subsequent investigations have shown that the tick had been present in the USA for many years. The lesson to be learned from this latest investigation is that more research and monitoring of tick and insect populations are needed. In a global context, disease threats will increase inevitably with continued expansion in international trade of live animals or animal products and with the growth in the globalization of trade and the influence of social media play a major role in communicating information across a spectrum of topics including disease threats.

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Rapid function is an important component of overall health in any species. The kidney performs several important functions, including water reclamation, electrolyte balance, blood pressure maintenance, excretion of waste products from the body, and production of factors for red blood cell stimulation, to name a few. In addition, the kidney removes excess blood flow—approximately 25% of the cardiac output. Therefore, changes in blood flow, either increased or decreased, can have a significant impact on renal health.

Equine renals were submitted to the University of Kentucky Veterinary Diagnostic Laboratory (UKVLD) over a 10-year period (2008-2018) and were spoiled for diagnosis related to renal pathology. Equine renal pathology and a variety of etiologies—hereditary, nutritional, toxic/nontoxic, infections, urological, inflammatory, or neoplastic—were identified in 211 cases. Sixty-six of the 211 cases were categorized as primary lesions (renal diseases), 141 as secondary lesions of the kidney, and four as incidental. Major etiologies included dehydration and use of multiple NSAIDs. Secondary diseases in 55% of cases (n=211), or incidental in 7% (n=15), were another common bacterial isolate, most often localizes to the kidney. The largest proportion of congenital lesions (seven cases). The stones were composed of renal cysts or congenital hydronephrosis/hydronephrosis. Renal cysts or congenital hydronephrosis/hydronephrosis has been associated with any nidus of renal disease or neoplasia. Other smaller components include cysts, papillary necrosis, pyelonephritis, renal lesions were determined to be primary in 38% of cases (n=60), secondary to another process in 95% of cases (n=211), or incidental in 4% (n=9).

Significant processes associated with primary lesions included renal infectious/inflammatory (35 cases), congenital (21 cases), neoplastic renal abnormalities (19 cases), nephroliths (13 cases), toxic (four cases), trauma (two cases), and other miscellaneous (i.e. chronic kidney disease, primary nephropathy) conditions (49 cases). Within the infectious/inflammatory group, the most common cause was a bacterial pathogen resulting in nephritis. The largest proportion of cases was due to Aspergillus species infections in foal's. Respiratory tract of an acute cause that often results in the kidney. Infection can result from another common bacterial infection, most often seen in neonatal foals and occasionally adults. Infections with E. coli can range from asymptomatic to severe clinical disease. E. coli is commonly isolated from the kidneys of foals and young horses with signs of respiratory disease. E. coli is also a common cause of urinary tract infections in horses. The equine kidney has a vital role in overall health. A variety of disease processes can impact renal function. Awareness of these diseases is important for equine health.

CONTACTS

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Commentary

Within recent months there have also been reports of the introduction of invasive species of mosquito (Culex pipiens-pipiens) into Spain and of ticks (Ixodes hystricis and I. ricinus) into Germany. Although the discovery of H. longicornis was important for the first time in 2011, subsequent investigations have shown that the tick had been spreading in the UK or in France since 2010. The species is known to be transmitted from the larval to the adult stage by several species of mosquitoes (Aedes, Culex). H. longicornis has now spread over a wide range of particular disease vectors in the USA, there are no disease vectors that can be considered as co-existing in a global context, blurring the boundaries between species. The worldwide distribution of H. longicornis and the spread of H. longicornis is beyond historically defined boundaries, in no small part because of the worldwide trade of live animals or animal products and international travel. 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