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Animal Industry News Update

from the LCES Animal Science Specialists

LSU AgCenter Research & Extension

Animal Health (Dr. Christine Navarre)

ANAPLASMOSIS

Anaplasmosis is a disease of cattle that is caused by the blood parasite *Anaplasma marginale.* This organism infects red blood cells, which leads to anemia. *A. marginale* also can infect sheep and goats and some wild ruminants, including white-tailed deer. These animals do not usually show signs of disease, but possibly can serve as a reservoir for the disease. This disease is endemic in some parts of the Gulf Coast, meaning that it occurs regularly and is basically "native" to the area. Be aware that due to increased movement of cattle in previous years, some areas that have been considered non-endemic in the past may now have more anaplasmosis. With cattle moving in and out of hurricane and drought ridden areas, the possibility of introduction of diseases, including anaplasmosis, increases.

Transmission

Anaplasmosis is transmitted by insects or people. Horse flies, and some species of ticks are the main insect vectors. Spread by other biting flies (such as stable flies), horn flies and mosquitoes is unlikely, but possible during severe infestations. People can spread anaplasmosis through reuse of needles, and improper cleaning of instruments during dehorning, castration or tattooing. In one study, when a needle was used on an infected cow, the next animal had about a 60% chance of getting infected when the same needle was used.

Clinical Disease

Once the *Anaplasma* organism infects an animal it usually incubates in the body for 3-5 weeks before the animal actually gets sick. Cattle less than two years of age rarely show any signs, even if they become infected. Cattle older than two years of age have more severe disease symptoms and are more likely to die. Whether or not an animal shows any signs, if it does become infected, it is usually infected for life. These carrier animals are immune to future disease, but become a source of infection for other cattle.

Outbreaks of anaplasmosis usually occur in summer and fall. Some of the common signs are fever, weakness, depressed attitude, decreased appetite, decreased milk production, and a white or yellow color to the gums, white of the eye, or vulva. Aggressive behavior also is common, especially in beef cattle. Abortions may occur in females and temporary infertility can occur in males. Animals with severe disease may die. If they survive, they are likely to be "poor-doers". Infected animals with less severe signs or no signs at all can have decreased milk production and infertility/embryonic death. This leads to decreased numbers of calves born and decreased weaning weights, both of which add to the financial losses due to anaplasmosis. In endemic areas, some herds may only suffer these less noticeable problems without having the very obvious illness and deaths. This makes the disease harder to recognize but financial losses can still be severe.

Diagnosis

If anaplasmosis is suspected, producers should contact their veterinarian to confirm the diagnosis. There are other diseases such as "red water" (caused by a Clostridium) or leptospirosis that can appear similar. There are tests to find carrier animals. A new test called the competitive ELISA ("cELISA") appears to be the best. Just beware that in the first days after infection, the test may be negative, even though the animal is infected. So retesting is sometimes indicated.

Treatment

Treatment of cattle with long-acting formulations of injectable oxytetracycline can be beneficial if done in the very early stages of the disease. Many times cattle are not recognized as infected until they are severely anemic, and treatment may be too late. In fact, the stress of treatment may kill the animal, so it is sometimes best to leave them alone. A blood transfusion could be considered in valuable animals, but still may not prevent death. Treatment is best reserved for the remainder of the herd to stop any early infections from getting more severe. Treatment of carrier animals to clear them is not usually effective so should not be attempted.

Prevention and Control

For herds in endemic areas there is constant potential for exposure, and total prevention or elimination of the disease from a herd is not realistic. Therefore, the goal is to prevent and minimize clinical and subclinical disease and production losses. Producers in endemic areas should assume there is a good chance they have carrier animals in their herd that look perfectly healthy but can be a source of infection, so practices that could potentially spread the disease (such as reusing needles) should be eliminated. Supplying tetracycline products in feed or mineral supplements will not totally eliminate problems, but will greatly reduce them. Tetracycline is added to these supplements at different levels, so make sure that the supplement is labeled for the "prevention of anaplasmosis" to assure a high enough dose. Control of ticks and flies also will decrease spread of the disease. One of the most effective means of prevention is vaccination. The only vaccine currently available is from University Products, L.L.C. (anaplasmosis.com) and not all states have approval to use this vaccine. This product is relatively expensive compared to other vaccines, but when the costs of deaths, chronic poor-doers, abortions, and milk production decreases are all considered, the vaccine may very well be cost effective in herds in endemic areas. The time to vaccinate is in the early spring. Producers should talk to their veterinarian about the availability and cost effectiveness of this vaccine in their herds.

In non-endemic areas, prevention of infection may be possible with biosecurity measures, especially testing of herd additions with the cELISA. However, since this test may miss animals in the very early incubation phase, single use needles, proper cleaning of equipment and vector control are important just in case a carrier slips into the herd undetected. Vaccination of valuable animals also should be considered.

Introducing cattle from non-endemic areas to endemic areas should be done carefully. If possible, introduce new animals during the non-vector season (if there is one). Consider vaccination on arrival. If vaccination is not available, consider treatment of the new animals with

long acting oxytetracycline two weeks after the vector season starts, or two weeks after arrival if introduced during the vector season.

Horses (Dr. Clint Depew)

Equine Protozoal Myeloencephalitis (EPM)

In a recent survey, 37% of people reported that they owned an EPM infected horse, 28% had a friend who owned an EPM infected horse, and 26% of horsemen reported that EPM is a serious problem in their area.

EPM was first reported in 1995, and is a protozoan infection that develops in the muscle of a raccoon, skunk, armadillo, cat, or other small species. Then, the opossum eats dead animals that are infected with the protozoa. The protozoa develop into their infective stage in the opossum and are spread in the feces of the opossum. The opossum deposits their feces in feed, hay, pastures, or water buckets and thereby passes the infection or the protozoa to the horse. The protozoa infect the horse and move from the intestines to the blood system and attach to the white blood cells. In times of stress, white blood cells seem to be able to pass through the horse's blood brain barrier to the central nervous system where they cause real damage

The protozoa damage the horse's nerve cells, and ultimately reduce normal nerve function. Incooridation (such as dragging the hind legs and an unsteady gait) are typical signs of EPM. Atrophy on one side of the body is common due to nerve damage. Without proper nerve stimulations the muscle starts to waste away, and horsemen will observe differences in size of the muscles on one side or another. Sometimes paralysis of an eye and lower lip may occur resulting in symptoms similar to a stroke in humans.

There are a number of tests for EPM, but all of them basically detect antibodies. A large number of horses are exposed to the disease and have antibodies without showing any signs of the disease itself. In fact, only about 1% of the horses that are exposed will develop the disease. In diagnosis, the first test is usually on the blood, which will indicate exposure. If that test is positive, veterinarians will normally try to test the central nervous system fluid. If the protozoa antibodies are present in the central nervous system's fluid, the horse is generally considered a confirmed case of EPM.

There are three different drugs, used under the supervision of a veterinarian, that can attack the protozoa and destroy it. These drugs have been quite effective in killing the protozoa, however, if neurologic damage has been done, recovery may not be complete. Only 10-20% of the horses actually recover completely. Therefore, it is extremely important to get an early diagnosis before extensive damage is done.

Since EPM has become so widespread it is important for horsemen to take steps to minimize exposure and reduce contamination. This can be done by minimizing the possibility for opossums to get into feed bins or hay storage, and regularly cleaning the barn and water sources. Scientists speculate that the white blood cells, which do not normally cross the blood-brain barrier, will cross in times of stress when the immune function of the horse is reduced. Therefore, if the horse has been exposed to EPM it is important to reduce stress as much as possible to prevent the infection from crossing into the central nervous system.

Swine (Dr. Tim Page)

Show Pig Vaccinations and Circovirus

Everyone spends a lot of time, energy and money in selecting, purchasing, housing and feeding their show pig projects. Sometimes, one of the most important areas of concern is forgotten. Health is one of the most important concerns you should have with your show pigs, and you can improve health status and keep pigs healthy by vaccinating for the right diseases.

You should purchase show pigs from reputable breeders that are vaccinating their sows before farrowing and vaccinating the baby pigs at about 10 days of age. The sow vaccination increases the concentration of antibodies in the colostrum. These antibodies are absorbed by the baby pigs and provide temporary protection until the their immune systems are able to do it on their own. Even when purchasing pigs from breeders with quality health programs, there are some critical vaccinations you need to consider for your show pigs.

There are several vaccinations that I recommend for your show pigs when you get them home. You should vaccinate for mycoplasma and erysipelas. These vaccines require two different administrations two weeks apart. Several companies produce and market quality vaccines to prevent these diseases. The mycoplasma organism can cause pneumonia that will result in coughing, poor feed intake, poor growth and poor feed conversion. Once infected, pigs are more susceptible to other diseases and health problems. Erysipelas seems to manifest itself every year in Louisiana show pigs. Jackpot shows in the late fall and winter are notorious for spreading erysipelas. It only takes one pig that is infected and the entire barn can go home infected. It can cause death, lameness and chronic arthritis. If the pigs survive the initial acute infection, the 'Diamond Skin' disease also will reduce growth rate and performance.

Another disease that we need to be vaccinating against is porcine circovirus. This disease was first identified in the 1970's but really did not start causing problems until the 1990's. It is now prevalent throughout the pork industry and can cause postweaning multisystemic wasting syndrome (PMWS), porcine dermatitis and nephropathy syndrome (PDNS), porcine respiratory disease complex (PRDC), sporadic cases of reproductive failure and death. Again, when you get your show pigs home, vaccinate (one dose) against porcine circovirus and its associated diseases. The first generation of vaccines that were developed provided hit and miss protection. However, the vaccines currently on the market are excellent for providing protection against circovirus.

Dairy (Dr. Charlie Hutchison)

Milk Prices, Production and Cow Numbers

The prices for the different classes of milk produced in April are: Class I $21.71/cwt, Class II $15.29/cwt, Class III $16.76/cwt and Class IV $14.56/cwt. Based on these prices and an estimation of the utilization in each class, a uniform blend price of about $19.75/cwt $\pm$ $0.35/cwt should result. For producers in South Louisiana, this should result in a net pay price, for milk produced in April, of $18.80/cwt to $19.80/cwt depending on deductions, butterfat level and incentives.

The Class I price for May milk was announced at $20.42 for Federal Order # 7 at the Atlanta zone. Part of this price was the result of an increase of $0.70/cwt to the Class I differential going from $3.10/cwt to $3.80/cwt. However, some of the location adjustments for individual plants were changed yielding a net result of an average increase of $0.24/cwt in the Class I differential depending on the plant location.

The USDA stated that U.S. milk production in the January-March quarter of the year totaled 47.6 billion lb, which is up by 3.2% from the January-March quarter last year. The average number of milk cows in the U.S. during the quarter was 9.25 million head, which is an increase of 112,000 head compared to the same quarter last year.

According to Bob Cropp, professor emeritus at the University of Wisconsin-Madison, monthly milk production is likely to continue increasing about 2% or more compared to a year earlier. " While high feed prices may hold down increases in milk per cow to no more than 1%, earlier herd expansion decisions from record high milk prices in 2007 will hold milk cow numbers higher than a year ago," he said. An analysis by Alan Levitt, editor of the Daily Dairy Report, revealed that the U.S. dairy herd grew by an average of 1,400 cows per week for the period of February 2005 – March 2008, and at a rate of 4,000 cows per week in the past five months. However, during the past year, milk production per cow grew by just 1% (about half the historical rate).

The drop in milk prices and the continued rise in feed prices have resulted in the milk-feed ratio for April of 1.90, which is down 17 points from March's revised ratio, and down 61 points from April 2007, according to USDA's "Ag Prices" report. The Milk-feed ratio has now dropped more than 100 points since last summer, when it was 3.17 for three straight months from July through September.

Dairy cow culling has not been affected very much from the drop in milk price and increases in feed, fuel and fertilizer prices. According to the USDA Slaughter report in March, 215,100 cull dairy cows went to slaughter which is up just 800 head from February, 2008, but 15,300 fewer than March, 2007. During the first quarter of the year, cull cow slaughter totaled 665,000 head, compared to 660,000 head for the same period a year ago. However, keep in mind that some of the slaughter numbers from the first quarter of 2007 were inflated due to a CWT buyout program.

Poultry (Dr. Theresia Lavergne)

Antibiotic resistance in poultry?

Recent research from University of Georgia scientists proposes that removing antibiotics from poultry feed does not reduce antibiotic resistant bacteria. The researchers reported that chickens raised in pristine environments and on antibiotic-free farms had high levels of antibiotic resistant bacteria. Thus, the resistances probably do not come from the antibiotics used in chicken feed.

In the research, chickens were raised in commercial conditions and in a laboratory. In each setting, chickens were raised either with or without antibiotics. The levels of antibiotic resistant intestinal bacteria were measured. Also, the level of drug resistant campylobacter bacteria was measured.

The birds raised in the laboratory had levels of antibiotic resistant bacteria similar to that of the birds raised in commercial conditions.

So, why are the antibiotic resistant bacteria present? The researchers report that the birds must be coming to the farm with the antibiotic resistant bacteria. The bacteria are being transferred vertically – from the hen to the chick.

Therefore, according to these findings, the banning of antibiotics may not be as effective as assumed, and antibiotic resistance is more complicated than it appears.

The best advice for consumers is to follow proper food handling, preparation, and cooking procedures in order to prevent any potential foodborne illnesses.
(Source: Poultry Times, April 21, 2008)