VPN

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Veterinary Parasitological Newsletter

External Parasite Update

In This Issue:

The onset of spring is upon us and we are coming out of a long cold winter. Well with cold weather brings more hay feeding and as most of you all know we have to feed hay to supplement our animals nutrition. However, a major draw back to supplementing our animals with hay is that we usually try to get the hay to the animals in the same location whether it is in a feeder or unrolling a bale in the same location. This is all done fairly efficiently with the use of truck bed bale loaders or even a tractor with a spike. Well with efficiency comes some unintended consequences and one of those consequences is the residue of wasted hay left over. This residue is what brings us to the bug issue especially in cow/calf systems.

The residue left over from hay feeding provides stable flies an ideal habitat for their immature stages to develop and emerge as adults. Well you might be thinking what kind of problems does a stable fly cause. A study in Nebraska demonstrated that grazing steers exposed to stable flies for an extended period weighed an average of **37 lbs less** than steers that were protected by repeated insecticide treatments (Campbell, et al. 2001).

Stable flies are common on

cattle in Oklahoma from May through September and generally peak populations occur around late May and early June. These flies irritate the animals by biting the lower portion of the body or legs of the animal. Animals usually will stomp their feet, bunch into corners or in large groups to try to avoid the painful bites. Another typical behavior of animals that are being attacked by stable flies is that they will stand in water that comes to just over the hocks of the animal essentially protecting their legs from the biting flies. Usually animals will exhibit this behavior even with normal temperatures that are not excessively hot which is when you would normally see this behavior exhibited.

Hay feeding sites provide ideal habitats for the stable fly and it has been demonstrated in Kansas that a typical round bale feeding site could provide approximately 58,000 stable flies per week (Talley unpublished data). When researchers characterized the hay feeding sites in relation to larval development they determined that the concentration of manure was the limiting factor for successful stable fly development (Talley et al. 2009). What they determined was the concentration of animals seemed to contribute more to stable fly development at these hay feeding sites than the amount of wasted hay. They also demonstrated that even when you have a hay saving feeder, such as those known as cone feeders where the bale does not rest on the ground but rather is suspended, did not influence the number of stable flies emerging from these hay feeding sites. However, they did determine that when unrolling a bale over a new location every time no stable flies developed in the wasted hay residues. As a producer you might be wondering what the effects of unrolling a bale at a new location would have on the native forages. Well these researchers went a step further to demonstrate that there were no detrimental effects to native forages at these sites of hay feeding.

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So essentially unrolling hay bales at a new location every time did not provide any stable flies and did not effect the native forages (Talley et al. unpublished).

So you might be thinking this is all well and good but I have already feed hay in feeders all winter and now you are telling me I am about to have a stable fly problem. Not exactly, one of the interesting things about stable flies is that the particular stages that are developing in these hay substrates are fairly immobile in relation to the adults. In fact, one of the best control methods you could employ is to either clean up the hay feeding site before late May or disturb by dragging some kind of implement through the hay feeding site. Why does this work? Well essentially it does two things: 1.) it kills the larvae and pupae by mere physical damage, and 2.) it allows the substrate to dry out quicker which inhibits larval development.

In general stable flies can cause both irritation to the animal (literally) and to a producer (economically). Always remember that when considering how to control a pest one should always think about an integrated approach. Usually an integrated approach is one that applies the most economical, environmental, and logical method of controlling the pest.

Justin Talley PhD

Extension Livestock Entomologist

Points to Consider:

- Clean up the hay before flies become a problem
- Consider modifying your hay feeding technique in the winter to avoid stable fly problems in the spring and summer
- If clean out is not an option consider disturbing the hay feeding site in a manner that allows the site to dry out

Equine piroplasmosis and Ticks

Equine Piroplasmosis (EP) is a blood-borne protozoan infection caused by *Babesia caballi* or *Babesia equi* (also known as *Theileria equi*). It affects horses, donkeys, mules, and zebras. The disease is spread by ticks. The clinical signs of horses infected with EP are vague and varying. The mild form of the disease can cause lack of appetite and/or weakness. More severe cases may show any of the following: fever, anemia, jaundice, swollen abdomen, labored breathing, rough hair coat, red urine, colic, depression or altered gait. Chronic carriers are often asymptomatic. There have been three recent incidences of Equine Piroplasmosis in this country. In Florida during 2008, there were 20 horses positive for *B. equi* on 7 related premises. All of the positive horses were euthanized. In Missouri during 2009, there were 7 horses positive for *B. equi* on one premise. Five of these horses were euthanized, two horses were illegally removed from the premise and have not been located. In both incidents, the source was considered to be horses from Mexico involved in unsanctioned racing. The most recent incident involving Texas has to date found 342 horses positive for *B. equi*. There are 319 EP positive horses in Texas and 23 positives are located in 11 other states. All of the positive horses originated from the affected premise in Texas and information suggests the disease has been present on this premise for at least a couple years. In general ticks are effective vectors of EP but to date only three that are found in Oklahoma have demonstrated the ability to transmit the causative agent(s) in laboratory settings. Those ticks are listed below:

Dermacentor albipictus –Winter Tick

D. variabilis - American Dog Tick

Rhipicephalus sanguineus - Brown Dog Tick

If you have any questions about Equine Piroplasmosis, please contact the State Veterinarian's office at 405-522-6131. *Source:* Michael Herrin DVM

Winter Tick

American Dog Tick

Brown Dog Tick

Things to consider at this time of year:

- Start preparing for internal parasites in cattle by selecting a treatment program
- Monitor animals for ticks
- Vaccinate bulls for anaplasmosis if not previously done this year

What to expect from LPN contributors:

- Up to date information on external and internal parasites affecting livestock
- Applicable tips to consider
- General information related to livestock
- Diseases vectored by the parasites
- Production parameters affected by a parasite infestation

Internal Parasite Update

Trichononiasis

Overview

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While trichomoniasis is not a new disease, it is certainly one that is gaining ground as a cause of reproductive problems in beef cattle. This highly contagious venereal disease causes infertility and abortions. It is caused by the protozoan *Tritrichomonas foetus*, a one celled parasite that lives in the cow's reproductive tract and on the bull's penis. There are usually no apparent signs of illness in the cattle but there will be high percentages of open cows, late abortions, and an extended calving season. A few cows may develop pyometra.

The bull is the vector of the disease and most bulls four years of age or older become chronically infected when exposed to the organism. Younger bulls also become infected but can clear with time. This is because the organism lives in the crypts of the prepuce, which become deeper and more sheltering as the bull ages. About 80% to 90% of the cows bred to an infected bull become infected. Most of these cows will terminate their pregnancy but in a few months develop sufficient immunity to carry a calf to term if they have an opportunity to rebreed. This results in extended calving season and lower weaning weights because of younger calves. The immunity is short lived and the cow is subject to a repeat problem next year. In fact the most crippling impact often hits a herd in the second year.

Diagnosis is by means of either identifying the organism from prepucial washing of the bull or vaginal mucous of the cow, or by the polymerase chain reaction test (PCR) which is a DNA test. The culture to identify the organism is relatively easy and inexpensive but

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while a positive test confirms the presence of the disease, a negative test result does not necessarily guarantee that the organism is not present. For this reason multiple clean tests are required to declare and animal free from the infection. The PCR test is more expensive but a single test will result in a definitive yes or no.

There are several ways to prevent or control the disease. A vaccine is commercially available which will help limit infertility losses and prevent shedding, but it will not eliminate the problem in infected animals. It requires two doses prior to the breeding season and then an annual booster. Closed herds can prevent bringing in the problem if it not already in your herd, but closed herds make it difficult and expensive to introduce new genetics. Open cows should be culled to prevent contaminating new bulls. Also, utilizing young bulls helps since they are less susceptible to becoming chronically infected. Herd bulls should be tested and positive tested bulls sold for slaughter. The most important step in preventing the introduction of the problem into your herd is to always buy virgin bulls from reliable sources. Avoid used bulls if possible or test with the PCR test.

All of the states surrounding Oklahoma have regulatory policies in place. The Oklahoma Department of Agriculture has a set of proposed rules before the state government for consideration this spring to help protect Oklahoma producers. The proposed rules include the following;

- All non-virgin bulls entering the state must have a negative Trichomoniasis test within 30 days pre-entry and a second negative test within 30 days post-entry.
- No bull that has tested positive may enter Oklahoma except when consigned directly to slaughter.
- Cows from known infected herds are restricted from entry with a few exceptions.
- A voluntary *T. foetus* herd certification program is to be implemented.

Trichomoniasis is a disease that has the potential to cause economic devastation to infected herds. The incidence of this disease appears to be on the rise in this region, but no one knows how widespread it is in Oklahoma at this time because routine testing has not been done on a widespread basis. It will pay off for producers to be vigilant for problems within their herd and be very aware of the status of replacement bulls they bring into their program. Your local veterinarian can help you decide which of the control measures, if any, you need to apply to your particular operation.

NTRER Group

National Tick Research and Education Resource

- **The NTRER is a national resource that is utilized by industry, research, and education for ticks**
- **Supplies ticks to interested parties conducting research across the nation**
- **Conducts research on various ticks and arthropod-borne pathogens**
- **Contributed most of the current knowledge of how ticks transmit anaplasmosis into cattle herds**
- **Currently working towards developing vaccines that can inhibit pathogen transmission by ticks**
- **Meet the members:**
- **Dr. Kathy Kocan Dr. Ed Blouin Dr. Jack Dillwith Dr. Jose de La Fuente Dr. Debra Jaworski Dr. Susan Little Dr. Mason Reichard Dr. Eileen Johnson Dr. Michael Reiskind Dr. Ed Shaw Dr. Kristin Baum Dr. Kenneth Clinkenbeard Dr. Sidney Ewing Dr. Justin Talley Robin Madden Lisa Coburn**
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