

Updates in Whitetail Management

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● **Cervids**

- The term “cervid” refers to any one of the various members of the cervidae family; a group of hoofed animals that include such members as:
 - ✦ White Tail Deer
 - ✦ Elk
 - ✦ Fallow Deer
 - ✦ Reindeer
 - ✦ Axis Deer
 - ✦ Sika Deer
 - ✦ Red Deer

● Cervids

- Cervids are part of the ruminant family.
- Currently, there is little research done to help you as a veterinarian treat these particular animals.
- We rely on our knowledge from other species – particularly sheep and goats to treat and take care of these animals.

● **COMMON DISEASES OF WHITE TAIL DEER**

- **Common diseases of White Tail Deer include:**
 - CWD (Chronic Wasting Disease)
 - EHD (Epizootic Hemorrhagic Disease)
 - Capture Myopathy

- Pneumonia
- Clostridials
- Parasites
- Rabies

- **Chronic Wasting Disease**
 - Changed the cervid farming industry in the US.
 - ✦ Farmed cervids that die or are harvested
 - Must be tested for CWD
 - Farms with a positive case
 - ✦ quarantined / depopulated – depends on state regulations
 - Trace backs are initiated
 - Other farms are quarantined
 - Quarantine- 3 to 5 years

- **Texas and Pennsylvania**
 - Historically have the largest # of Cervid farms/ranches

- **Texas**
 - Circa 2005 – over 1,200 facilities
 - Now – around 500 facilities

- **Pennsylvania**

- Circa 2005- 1,000
- Now – between 500-600
- **Initially**
 - Many states said we don't have it, we don't want it
 - ✦ Limited what states they would receive cervid shipments
- **Reality**
 - More prevalent than anyone wants to admit
- **Recent Improvement**
 - Sales for shooter bucks have increased
 - Prices have begun to go back up
 - Research into genetic resistance continues

- **TOP KILLERS OF WHITE TAIL DEER IN PA**

- Based on a study done by Dr. Jason Brooks from the PA Animal Diagnostic Lab, Penn State from 2000-2003 submitted for necropsy evaluation:
 - 1. Pneumonia

- 2. Enterocolitis
- 3. Malnutrition
- 4. Trauma
- 5. Gastrointestinal parasitism
- 6. Cellulitis with septicemia
- 7. Degenerative myopathy
- 8. Ruminal acidosis
- 9. Nephritis

- **TOP KILLERS OF WHITE TAIL DEER**

- Based on my own field experience working with White Tail deer, the top 3 Adult killers would be:
 - 1. Stress
 - 2. Pneumonia
 - 3. Trauma

- **TOP KILLERS OF WHITE TAIL DEER**

- Based on my own field experience working with White Tail deer, the top 3 Fawns killers would be:

- 1. Necrobacillosis
- 2. Pneumonia
- 3. Enteritis

- **HOW TO WORK WITH WHITE TAIL DEER**

- **Remember Stress is one of the number one killers of White Tail deer:**

- Keep stress to a minimum
- Work quietly and slowly
- Be prepared
- Instruct your clients to be prepared

- Major Pathogens
- The Major players
 - Fusobacterium (Lumpy Jaw/Pneumonia)
 - Clostridium type A (diarrhea/death)
 - E. Coli(diarrhea)
 - Trueperella (Pneumonia)
 - Pasteurella Multocida (Pneumonia)
 - Biberstenia (Pneumonia)
 - Mycoplasma (Pneumonia)
 - EHD/Bluetongue

• **VACCINE RECOMMENDATIONS**

- I recommended that all deer be vaccinated with a product that covers pathogens common in cervid disease
- Encourage your clients to vaccinate the does twice yearly and the bucks once yearly, twice yearly if facilities are adequate

- What have/do producers used?

- Covexin 8/Alpha 7
 - Clostridium
 - ✦ Chauvoei
 - ✦ Septicum
 - ✦ Novyi
 - ✦ Sordellii
 - ✦ Tetani
 - ✦ Perfringens
 - Types C & D.

- Major pathogens
 - Fusobacterium (Lumpy Jaw/Pneumonia)
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• **VACCINE RECOMMENDATIONS**

- **Collect samples**
 - Submit to diagnostic lab
 - Determine known pathogens
 - Create Autogenous Vaccine for your clients

- **Newport Labs Autogenous Bacterin**
- **What is in the product**
 - 1. Fusobacterium**
 - 2. Clostridium type A**
 - 3. P. Multocida**
 - 4. Trueperella Pyogenes**
 - 5. Bibersteinia**
 - 6. Ecoli**

• **VACCINE**

RECOMMENDATIONS

- Does should be vaccinated during pregnancy.
 - Vaccinated 60 to 90 days prior to fawning
- If vaccination history is unknown
 - 2 doses of vaccination should be given
 - ✦ Primary at 90, secondary at 60 days prior to fawning

• **Necrobacillosis**

- **What is it ?**
 - An infection caused by the bacteria *Fusobacterium necrophorum*.

- *Fusobacterium necrophorum* is a Gram negative anaerobic bacteria.
- It is found world wide in the soil and is often part of the normal flora in humans and animals.

● **Necrobacillosis**

- ***Fusobacterium bacteria* can cause many different forms of disease in the Cervid population:**

- Necrotic stomatitis
- Foot rot
- Diphtheria
- Lumpy Jaw
- Pneumonia

● **Necrobacillosis**

- The most common forms of the disease that I see in practice are:

7. Lumpy Jaw
8. Diphtheria
9. Pneumonia

- **Lumpy Jaw**

10. Fawns and adults present with small to large swelling on the lower jaw or cervical region.
11. The swellings may open and drain or become hard and bony like.

- **Diphtheria**

- **Diphtheria**

- Mostly seen in fawns
- Bacteria invade the laryngeal mucosa and cartilage (back of throat)
- Clinical signs include: painful and loud breathing, extended head and neck, fever, off feed, dehydration and weakness

- Lymph nodes may enlarge and become visible / palpable, ulcers on the tongue are common
- Treatment : same as for Lumpy Jaw

● **Pneumonia**

Symptoms that accompany pneumonia are:

12. Fever
13. Cough
14. Increased Respiratory rate
15. Off Feed
16. Nasal Discharge
17. Depression
18. Chest pain
19. Muscle pain / reluctance to move

● **PARASITES**

- **Common types of parasites found in farmed Whitetail**

- Strongyles (*Strongyloides papillosus*)
 - Hookworms (*Trichostrongyloidea*)
 - Whipworms (*Trichuriasis*)
 - Tapeworms (*Anoplocephalidae*)
 - Lungworms (*Dictyocaulus viviparus*)
 - Coccidia (*Eimeria*)
 - Giardia (*Giardia duodenalis*)
 - Cryptosporidium (*Cryptosporidium parvum*)
 - Liver Flukes (*Fasciolidae*)
- An atypical coccidia has been identified in wild white tail deer and has now also been identified in farmed white tail deer – *emieriazajace*.
 - *Emieriazajace* :
Half the size of normal eimeria but slightly larger than a cryptosporidium cyst on fecal flotation.

Does respond to normal anti-coccidial agents

•CHEMICAL IMMOBILIZATION

- **Drugs used in the chemical immobilization of White Tail Deer:**

20. Class III Drugs:

- ✦ Telazole®
- ✦ Ketamine®

21. Alpha₂ Adrenoreceptor Agonists:

- ✦ Xylazine

22. Reversal Agents:

- ✦ Yohimbine
- ✦ Tolazine®
- **BAM**
- **MK or MKM**

•CHEMICAL IMMOBILIZATION

- **What is an effective mix of Xylazine and Telazole® ?**
 - 400 mg Xylazine (4cc's) mixed in one bottle of Telazole®.
 - Dose: 1cc of mixture /100 pounds of body weight
 - ✦ Yields out to be on average:
 - 2 Bucks per bottle
 - 4 Doe's per bottle
- This is my gold standard when dartingdeer.
- **BAM:**
 - Acronym for:
 - ✦ Butorphanol (50mg/mL)
 - ✦ Azaperone (100mg/mL)
 - ✦ Medetomidine (40mg/mL)
 - Developed by ZooPharm (Wildlife Pharmaceuticals Inc).
 - Produces good analgesia with a wide species application.

- **CHEMICAL
IMMOBILIZATION**

- MK or MKM

23. MKM – Medetomidine HCL 3.3mg/kg + Ketamine HCL 150 mg/ml + Midazolam HCL 5 mg/ml
24. Generally quick knock down
25. Duration 15 min or so...
26. Reversal 3 to 5 min

- **Anesthetic emergencies associated with chemical immobilization:**

- Respiratory distress / arrest
- Cardiovascular shock / failure
- Hyper / hypothermia
- Aspiration Pneumonia
- Capture Myopathy
- Bloat
- Seizures

- **Bloat:**

- Clinical Signs:

- ✦ Rapid shallow breathing
 - ✦ Increased CRT time
 - ✦ Abnormally distended abdomen

- Treatment:

- ✦ Place animal in Sternal recumbency – head and neck extended
 - ✦ Pass stomach tube

- Prevention:

- ✦ Proper positioning – sternal recumbency
 - ✦ Avoid direct sun exposure
 - ✦ Control food intake when possible prior to immobilization

- **Capture and Immune resistance**

- At the University of Otago in New Zealand a study was conducted on the immune capabilities of physically captured Red deer by a mitogen response test:

- ✦ It was found that the immune response of these deer is Zero after capture and does not return to normal levels for approx. 40 days post capture.
- ✦ Thus there exists a window of susceptibility of infection and disease for up to 6 weeks post capture.

- **Capture Myopathy:**

- Destruction of muscle fibers can be seen as early as 2 minutes from onset of a hard chase.
- Common clinical signs:
 - ✦ Non recovery = shock / death
 - ✦ Sudden death 24-48 hours post event
 - ✦ Hindend lameness / weakness 2 days-3 weeks post event
 - ✦ Brownish urine = myoglobin present
- Prevention:
 - ✦ Abort capture if deer is chased more than 2 minutes.
 - ✦ Re-schedule event no sooner than 24 hours.

- **Administering of Antibiotics:**

- Always administer antibiotics anytime a deer is darted.
- Why?
 - ✦ Because of the use of an injection method that is both non-sterile and rapid.
- Treat/Prevent Aspiration Pneumonia

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