DiagnosticInsights

Kansas State Veterinary Diagnostic Laboratory
www.ksvdl.org

Accredited by the American Association of Veterinary Laboratory Diagnosticians — May 2014

76th Annual Conference for Veterinarians

The conference will be held May 31st through June 3rd at the Hilton Garden Inn in Manhattan. The program can be found at http://www.k-state.edu/vet/annual-conf-14/

The KSVDL will have a booth at the conference in the trade show area. Please stop by and see us!!!

Stop by the KSVDL for the chance to win some great prizes!

The winners will be announced at the barbecue in the Hilton Courtyard on Monday evening.

Three prizes will be awarded:

1. **2 tickets to a 2014 KSU home football game of the winner's choice and one night's lodging plus $250 in free testing through the KSVDL**
2. **Kindle Fire HD™ 8.9" device plus $250 in free testing through KSVDL**
3. **$100 gift certificate from Varney's in Aggieville plus $250 in free testing through KSVDL**

Please join us for the all you can eat barbeque and live music on the Blue Earth Plaza lawn Monday night at 6 p.m., sponsored by the KSVDL!

Inside this issue:

To set up an account go to: www.ksvdl.org

Blackleg: It is that time of year

Jamie N. Henningson DVM, PhD, DACVP

Recently a 6-month-old Holstein calf was submitted for necropsy with a history of normal one day and dead the next with facial swelling and skin crepitus. This was the fifth animal to die suddenly in this herd. The herd had been vaccinated for blackleg in previous years. Snakebite was suspected. On necropsy, areas of skeletal muscle in the neck, shoulder and hips were characterized by a severe patchy black discoloration (Figure 1). A fresh skeletal muscle sample was taken and was positive by fluorescent antibody (FA) testing for *Clostridium chauvoei* (Figure 2).

Infection with *Clostridium chauvoei* can result in a highly fatal disease called blackleg. Blackleg typically affects cattle from 4 months to 2 years of age seldom affecting cattle older than 2 years of age. Spores from C. *chauvoei* are present in contaminated soil and infect cattle when contaminated feed or pasture are ingested. The spores are ingested and pass through the intestine, enter the bloodstream and are deposited in muscles. The spores germinate when a local event creates muscle damage or low oxygen tension. Toxins result in muscle necrosis and systemic toxemia. The animal most often dies suddenly without previous signs, or can be depressed with swelling of a muscle or group of muscles. There may be skin discoloration, and the skin may "crackle" when touched. An animal that dies of blackleg swells and bloats rapidly. On necropsy, necrotic black muscles can be found anywhere in skeletal muscle of the body (most often in the muscle of the pectoral and pelvic girdles), diaphragm and cardiac muscle. Other lesions that may be present are a fibrinohemorrhagic pleuritis and pericarditis, severe parenchymatous degeneration of the liver, kidney and endocrine glands. An odor of rancid butter, due to butyric acid production by the clostridial organisms may be detected in the affected mucle. If you suspect an animal has died from blackleg, the sample of choice is fresh muscle from an affected area of muscle for fluorescent antibody testing (Figure 2).

Vaccination is key in preventing this disease in your herd and there are some key vaccination guidelines to remember. Blackleg vaccines are killed (inactivated) and therefore a single dose of vaccine will not be fully protective; animals

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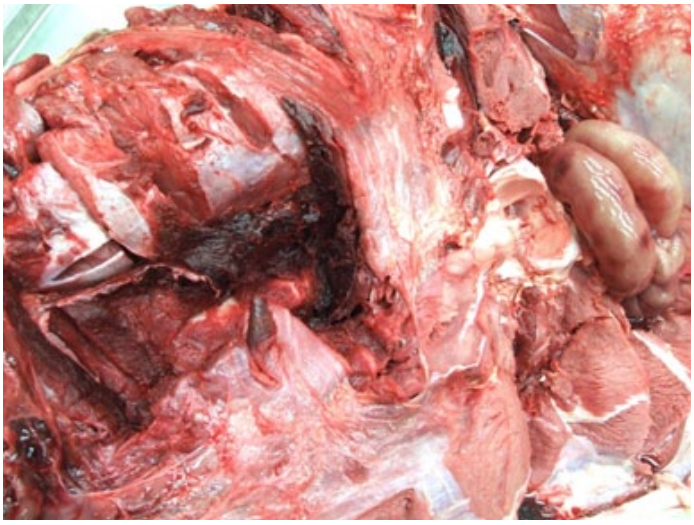


Figure 1. The hindlimb skeletal musculature of a 6-month-old Holstein calf with an isolated area of muscle that is red to black (myonecrosis), soft and smells rancid, which is typical of classic blackleg. Similar lesions are common in the skeletal muscle of the pectoral and pelvic girdles, diaghragm and heart. Lesion can vary among cases sometimes with lesions only found in the heart and/or diaphragm.

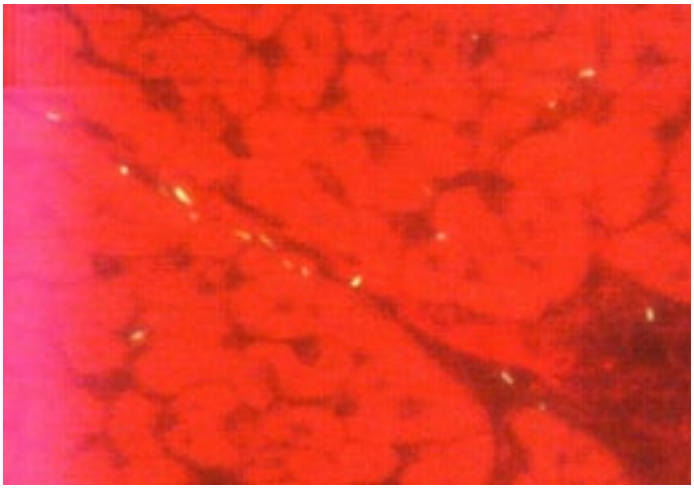
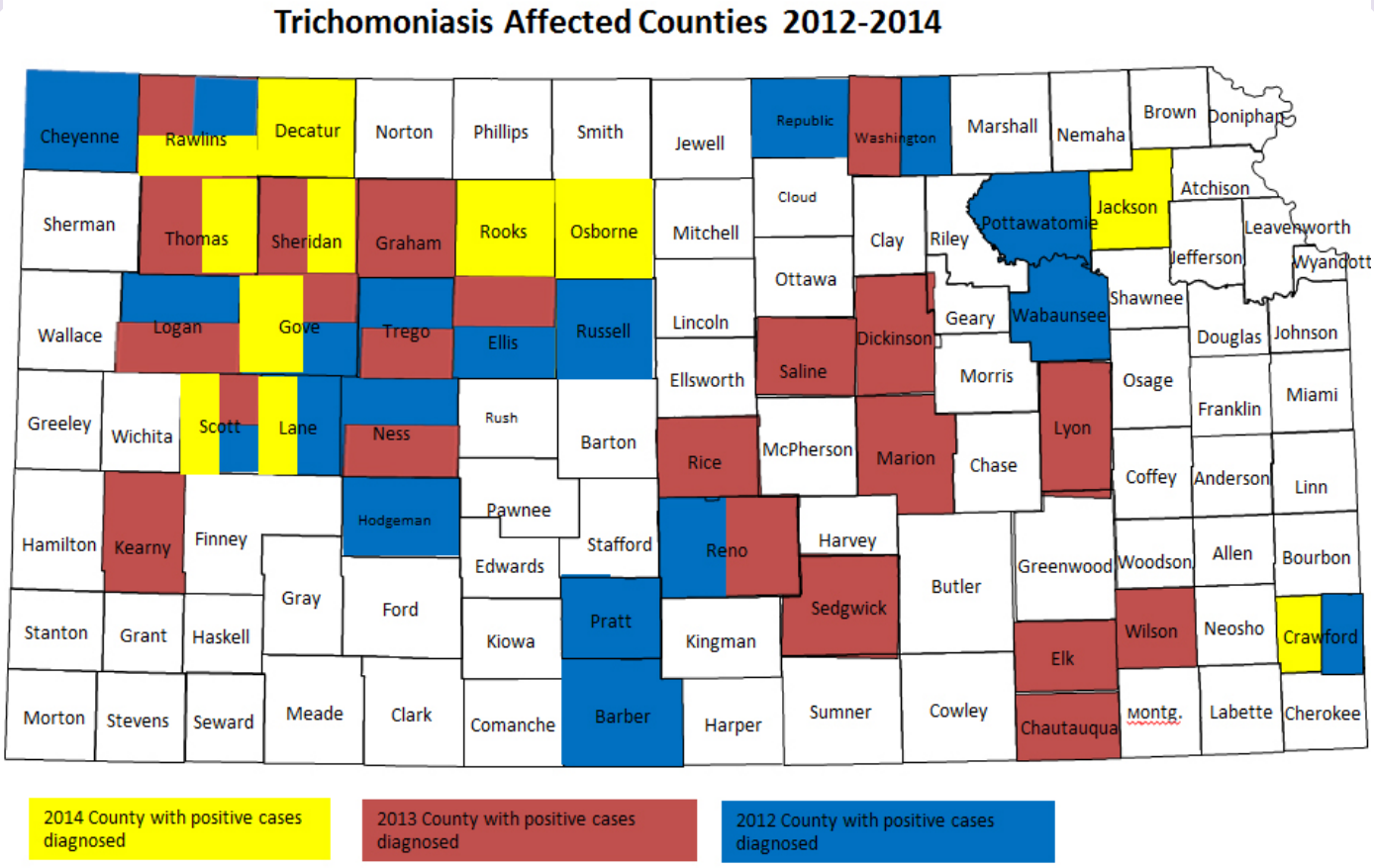


Figure 2. A section of fresh skeletal muscle from a lesion in the calf in Figure 1 that has positive green fluorescent Clostridium chauvoei on fluorescent antibody (FA) testing.



Revised May 8, 2014

Discoid Lupus Erythematosis

Gordon Andrews, DVM, PhD, DACVP

Discoid lupus erythematosis (DLE) is an autoimmune skin disease of dogs. It is not thought to occur in cats. Skin lesions are commonly restricted to the face and are usually bilaterally symmetric. The lesions include depigmentation, erythema, and scaling. In severe cases there is alopecia, crusting, erosion, ulceration and scarring. Chronic lesions are easily abraded and may bleed. Lesions often are confined to the planum nasale (figure 1), but also occur on the dorsum of the muzzle, lips, periorbitally, and on the ears. Some dogs have oral lesions characterized by depigmentation and ulceration, and lesions occasionally occur on the genitals and extremities. Lesions may be photo-aggravated or photo-induced. Squamous cell carcinoma has been reported to develop in chronic lesions on the muzzle. The Collie, Shetland Sheepdog, German Shepherd, and Siberian Husky are breeds predisposed to DLE. There are no age or sex predilections. Clinical differential diagnoses include systemic

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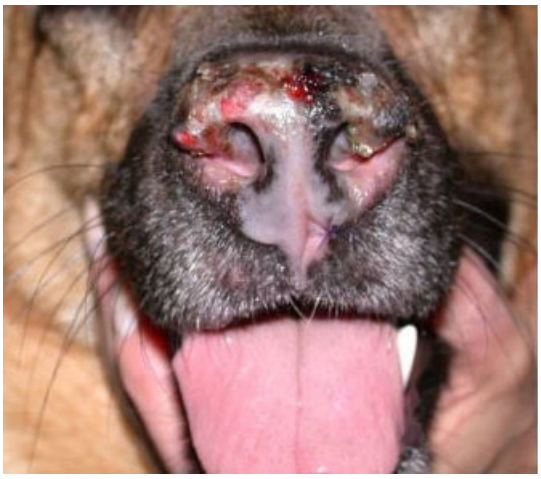

Figure 1: Depigmentation, erythema and erosions of the nasal planum in a dog with DLE.

ERYTHEMATOSIS |continued from Page 3

lupus erythematosus (SLE), mucocutaneous pyoderma, dermatophytosis, pemphigus foliaceus, pemphigus erythematosus, vitiligo, trauma, and Vogt-Koyanagi-Harada (VKH) like syndrome. Anti-nuclear antibody (ANA) testing and chemistry profile should differentiate SLE with cutaneous lesions from DLE. Dogs with SLE should have positive ANA test and evidence of systemic disease. Dogs with VKH should have concurrent loss of pigment of the hair, and uveitis. Histopathology can differentiate these diseases as long as diagnostic histopathologic lesions are found. The best sites to biopsy are early depigmented areas. Chronic ulcerated lesions are often secondarily infected and may not include microscopic lesions characteristic of DLE which confuses the histopathologic picture, so should be avoided. The characteristic histologic lesions of DLE are individual basal cell apoptosis, which is characterized by shrinkage and eosinophilia of the keratinocyte, basal cell vacuolar change, and diffuse infiltration of the superficial dermis by a band like (lichenoid) infiltrate of a mixture of lymphocytes, macrophages (some of which contain phagocytized melanin pigment released from damaged basal cells and is referred to as pigmentary incontinence), plasma cells and few neutrophils (figures 2 and 3). The combination of basal cell apoptosis, vacuolar change, and superficial dermal inflammation often obscures the dermal-epidermal junction. Damage to the dermal-epidermal junction may result in microscopic artifactual clefting which is a clue to the diagnosis of DLE. The epidermis is often hyperplastic and crusted. DLE is a relatively common skin disease that is readily diagnosed with appropriate skin biopsies.

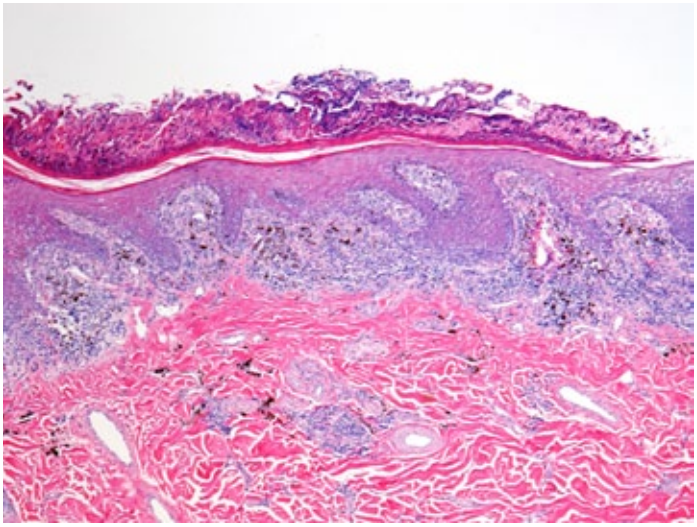

Figure 2. Low magnification photomicrograph of skin from a dog with DLE. There is dense band like (lichenoid) infiltration of the superficial dermis with lymphocytes, plasma cells, and macrophages that contain melanin pigment. The epidermis is hyperplastic and hyperkerototic and covered with a serocellular crust.

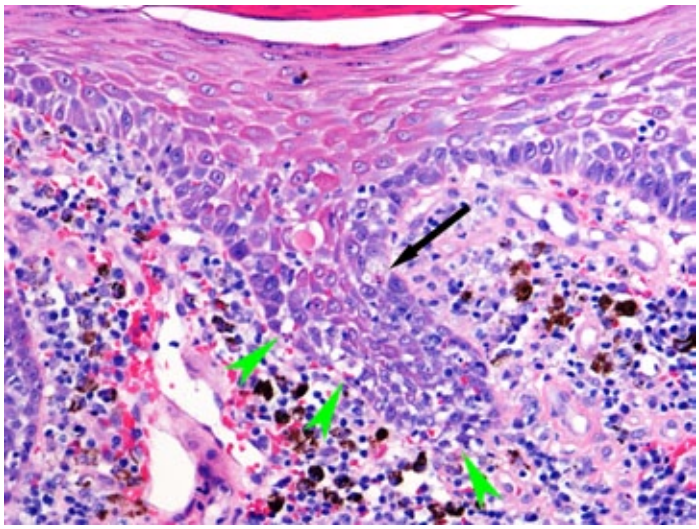

Figure 3: High magnification photomicrograph of skin from a dog with DLE showing superficial dermal inflammation, basal cell vacuolar change (green arrowheads), and shrunken, eosinophilic apoptotic basal cell (black arrow).

BLACKLEG |continued from Page 2

need to be boostered 3-4 weeks after the primary vaccination. Vaccination should begin at 3- 4 months of age, prior to 4 months of age calves are protected by antibodies provided by the dam through colostrum. If newborn calves are vaccinated at birth, they need to be revaccinated at 3-4 months of age. Since this is a killed vaccine, revaccination is key in continuing to prevent the disease in subsequent years. Cattle should be vaccinated annually in the spring prior to warm weather. The vaccination schedule may be altered to include more frequent vaccination in highly endemic areas and in herds with a history of blackleg. During an outbreak, unaffected cattle should be immediately vaccinated and treated with penicillin. This disease is often fatal but if caught early treatment with penicillin may result in success.

New Tests Available at KSVDL

Anticoagulant Screen

Anticoagulants contained in the screening:

Difethialone, Difenacoum, Warfarin, Pindone, Coumachlor, Diphacinone, Chlorophacinone, Bromadiolone, Brodifacoum

Sample specimens: Blood, Liver, Baits
Species: All
Day tested: Wednesday
Turnaround time: 4-6 days

Cost: $98.00/sample

For more information contact Dr. Gregg Hanzlicek at gahanz@vet.k-state.edu or 785-532-4853

Melanoma MPT Blend

Antibodies contained in the blend:

Melan A, PNL2, TRP-1, and TRP-2

Sample specimens: Formalin fixed tissue, Paraffin blocks, Slides
Species: Canine
Day tested: M-F
Turnaround time: 2-3 business days

Cost: $60.00/slide; Individual antibodies may be requested at $26.00/slide

For more information contact Dr. Jamie Henningson at heningsn@k-state.edu or 785-532-4129

Testing Updates

Coggins Test Selection

If the desired test (either ELISA or AGID) is not selected on the EIA submission form the default test completed by the KSVDL will be the ELISA.

Bovine Trichomoniasis Sample Handling

Bovine Trich samples must arrive in the KSVDL within 72 hours of collection in order for the test results to be valid.

KSVDL Specializations

DIRECTOR: DR. GARY ANDERSON
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785-532-4012

COMPANION ANIMAL OUTREACH: DR. BILL FORTNEY
785-532-4605

CLINICAL PATHOLOGY: DR. LISA POHLMAN
785-532-4882

COMPARATIVE HEMATOLOGY: DR. GORDON ANDREWS
785-532-4459

FIELD INVESTIGATIONS: DR. GREGG HANZLICEK
785-532-4853

HISTOPATHOLOGY: DR. JAMIE HENNINGSON
785-532-4461

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785-532-4818

MOLECULAR DIAGNOSTICS: DR. RICHARD OBERST
785-532-4411

PARASITOLOGY: DR. PATRICIA PAYNE
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RABIES: SUSAN MOORE, MS, MT(ASCP)SBB
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SEROLOGY: DR. RICHARD HESSE
785-532-4457

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785-532-4333

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785-532-4457

Developing, Delivering Accurate, Innovative Diagnostic Services

The mission of the Kansas State Veterinary Diagnostic Laboratory (KSVDL) is to develop and deliver accurate, innovative, and timely diagnostic and consultative services to the veterinary and animal health community while providing support for teaching, training and research programs.

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Continuing Education

www.vet.ksu.edu/CE/Conference.htm

May 31 – June 3, 2014
76th Annual Conference for Veterinarians
Hilton Garden Inn and Conference Center – Manhattan, Kansas

Test Results and Schedules

Laboratory results available On-Line All The Time!

To set up an account go to:
www.ksvdl.org

KSVDL hours:
Closed May 26th Memorial Day
Closed July 4th Independence Day
Will be open Saturday July 5th from 8 a.m. to noon

To receive this newsletter by e-mail, contact: ksvdloutreach@vet.k-state.edu.

KANSAS STATE UNIVERSITY