

Inside the Forum

V O L 2 | N O 1

S U M M E R 2 0 1 1

Parasitology Services	1
Feline Heartworm Disease	1
Equine Herpesvirus-1	2
Focus on Molecular Diagnostics	2
Diseases in Alpacas	3
GlobalVetLink	4
UPS Labels	4
ADDL Schedule	4

Parasitology Services Available through ADDL

In conjunction with the Clinical Parasitology Service in Purdue Veterinary Medicine, the ADDL offers complete Parasitology diagnostic services.

The Clinical Parasitology service is directed by Dr. Joe Camp, an internationally known parasitologist in the Department of Comparative Pathobiology.

Tests currently available include

Baermann.....	\$8.00
Cryptosporidium exam.....	\$8.00
Parasite i.d.....	\$15.00
Photofix.....	\$20.00
Direct exam.....	\$8.00
Egg hatch.....	\$12.00
Feline heartworm antibody	\$15.00
Knott's test.....	\$8.00
Occult heartworm.....	\$15.00
Qualitative flotation.....	\$8.00
Qualitative flotation (routine)	\$6.00
Sedimentation.....	\$8.00
Zinc sulfate flotation.....	\$8.00

A handling fee of \$2.00 will be added to each accession requesting parasitology only.
There is no additional accession fee.

If there are additional diagnostic tests for parasitic diseases which our clients would like ADDL to offer, please contact us and efforts will be made to establish those tests if possible.

From the Director Stephen Hooser

As Spring and Summer bring changes to the landscape of Indiana, so too are they bringing changes to the ADDL. After 23 years of service to Indiana as the Director of the ADDL, and a year as the interim Head of the Department of Comparative Pathobiology, Dr. Leon Thacker is retiring from Purdue University on June 30th. A celebration is planned for June 18.

At the Heeke ADDL at SIPAC, after 30 years of dedicated service to Indiana and the Poultry industry, Dr. Tom Bryan, Avian Diagnostician, is retiring from Purdue. A celebration of his career is planned for June 25th at the Heeke lab.

Many, many thanks to Dr. Thacker and Dr. Bryan. Their dedicated service to Indiana will be missed!

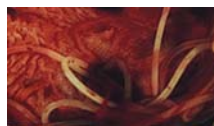
Hot Topics

- **From 2006 through March of 2011, ADDL received over 200 accessions with a pathology assignment from alpaca cases. These cases were reviewed to determine what conditions were most commonly found and constituted major problems for alpaca producers. P. 3**
- **Parasitology services available through ADDL. P. 1**
- **Equine herpesvirus outbreak in western United States. See p. 2 and our website for more information on this disease.**
- **Feline Heartworm Disease**

Feline Heartworm Disease

By Sarah L. Colledge, DVM

Edited by Dr. Abby Durkes, ADDL Graduate Student



Heartworm disease is a widely discussed topic in veterinary clinics throughout Indiana. It is one of the main diseases about which dog owners are informed, and measures are taken to prevent its occurrence in dogs. However, heartworm disease is not addressed as often when speaking to cat owners, even though feline heartworm disease has been increasing in incidence over the past ten years.

The entire article, including etiology, clinical presentation, pathology, diagnostics, and treatment can be found on the ADDL website or faxed/mailed to you at your request.



Equine Herpesvirus-1

Emma Fortenberry, Class of 2012

Edited by Dr. Bill Wigle, ADDL Pathologist

Abstract:

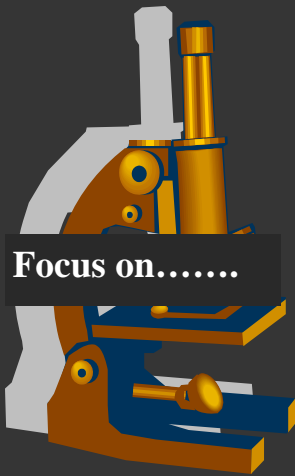
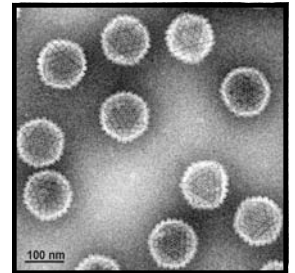
Equine herpesvirus-1 (EHV-1) is an economically devastating pathogen of horses that results in three distinct clinical manifestations:

- Rhinopneumonitis,
- Late-term abortion or neonatal foal death, and
- Equine herpesvirus-1 associated myeloencephalopathy (EHM)

A recent outbreak in the western United States has made this a disease of particular concern to equine practitioners. The following article reviews the epidemiology and characteristic lesions of EHV-1, as well as important components of disease control and prevention.

The entire article and references can be found on our web page

www.addl.purdue.edu or faxed/mailed to you at your request



.....Molecular Diagnostics

Under the supervision of Dr. Ramesh Vemulapalli, the Molecular Diagnostics section of ADDL performs polymerase chain reaction (PCR) assays to increase specific DNA/RNA amounts in order to identify disease agents.

PCR lab technician Barb Million brings a wealth of knowledge to the position with over 30 years of service to Indiana veterinarians and animal owners..



Heeke Animal Disease Diagnostic Laboratory
located at the
Southern Indiana Purdue Agriculture Center
11367 East Purdue Farm Road Dubois, IN 47527

Hours of operation
8:00-5:00 Monday-Friday

Phone
812-678-3401

Diagnostic Profiles

Diseases in Alpacas



From 2006 through March of 2011, ADDL received over 200 accessions with a pathology assignment from alpaca cases. A review of these cases should provide useful information for practitioners treating New World camelids.

The most common conditions involved the digestive system, accounting for 34% of alpaca cases submitted to ADDL. Oral diseases recognized included ulcerative stomatitis, glossitis and tooth root abscesses. Tooth root abscesses are fairly common in these animals and generally present as mandibular swelling (1).

Gastritis of undetermined cause, as well as mycotic gastritis, was observed. Ulceration of the third gastric compartment was diagnosed in six cases. Such ulcers have been described in llamas and are often seen in combination with other disease conditions or associated with stress (2). One case of grain overload was also diagnosed.

Gastrointestinal parasitism was quite common and included nematodiasis (most often *Hemonchus* sp. and *Trichuris* sp.), coccidiosis, cestodiasis and cryptosporidiosis. Nonspecific enteritis was diagnosed in six cases. Other intestinal problems included small intestinal and ileocecal intussusceptions, enterolithiasis and colonic rupture.

There were two cases of mesenteric abscess and one each of peritonitis and hemoabdomen. Hepatic lipidosis was the most common liver lesion along with additional cases of hepatic necrosis, cholangiohepatitis and nonspecific hepatitis.

Reproductive disease accounted for 15% of alpaca submissions. Most of these represented abortion where no etiology was determined. *Streptococcus* sp. and *Enterobacter* sp. were isolated from cases of placentitis. Individual cases of abortion were attributed to infection with *Encephalitozoon* sp. and *Toxoplasma* sp. One case of abortion was due to a twin pregnancy and two cases of dystocia were diagnosed. No definitive cause for neonatal death was found in most cases. Colibacillosis and bronchopneumonia were determined to be causes of neonatal death in one case each.

Septicemia accounted for 8% of alpaca submissions. Bacterial isolates included *Klebsiella* sp., *E. coli*, *Streptococcus* sp. and *Aeromonas* sp. One animal had West Nile virus infection.

Respiratory system diseases were found in another 8% of cases. Rhinitis was attributed to both bacterial and mycotic agents. Lipid pneumonia was considered an incidental finding in one case. Aspiration pneumonia was the most common form of pneumonia. No agent was isolated from cases of pneumonia, bronchopneumonia and pulmonary granulomas in six cases. *Serratia* sp. and *Klebsiella* sp. were isolated from one case each of bronchopneumonia. One case of pulmonary fibrosis was also diagnosed.

Cases involving the nervous system involved 6% of alpacas submitted to ADDL. One case each of polioencephalomalacia and cerebellar abiotrophy were diagnosed. *Listeria* sp. was isolated from a single case of meningitis. One case of mycotic meningoencephalitis and three cases of eosinophilic meningoencephalitis were found. No etiologic agent was isolated from other cases of encephalitis, meningitis and meningoencephalitis. Encephalitis meningoencephalitis in camelids has been associated with *Paralaphostrongylus tenuis* infection, but no nematodes were observed in the ADDL cases (3). There also was a single case of otitis externa and media.

Congenital defects in young alpacas accounted for 6% of diagnoses. The most common defect was choanal atresia with six cases. This congenital defect has been reported to be common in both alpacas and llamas (4). Cardiac defects that were diagnosed included two ventricular septal defects, one atrial septal defect and one case of dextroposition of the aorta. Single incidents of epiglottal hypoplasia, vulvar atresia and ectopic ureter were also identified.

The integumentary system was involved in 5% of cases. Nonspecific dermatitis was the most common diagnosis. One case each of demodectic mange and one of nonspecific mange were found. Two alpacas had dermatophytosis and one had a cutaneous abscess.

Approximately 4% of alpaca cases were diagnosed as neoplastic disease. Lymphosarcoma was the most common type of neoplasia found. Other tumors included fibropapilloma, jejunal adenocarcinoma, undifferentiated malignant neoplasm of mandible and spindle cell sarcoma.

Musculoskeletal disease was found in nearly 3% of alpaca samples submitted. Observed conditions included patellar luxation, intervertebral disc disease, vertebral fracture and osteomyelitis.

An equal number of cases involved the urinary system. Nephritis and pyelonephritis were the diagnoses.

Two cases of cardiomyopathy were diagnosed in alpacas; one each of the dilated and hypertrophic types.

Other diagnoses included emaciation, copper deficiency, and splenic rupture. No diagnostic lesions were identified in about 11% of alpaca submissions.

As can be seen from these laboratory findings, alpacas have a wide variety of medical problems that are not dissimilar from those of small ruminants. Gastrointestinal disease and parasitism were the most commonly observed problems at ADDL with reproductive and congenital problems also accounting for significant losses to alpaca producers.

References

1. Niehaus AJ and Anderson DE: 2007. Tooth root abscesses in llamas and alpacas: 123 cases (1994-2005). JAVMA 231:284-289.
2. Smith BB, Pearson EG and Timm KI: 1994. Third compartment ulcers in the llama. Vet Clin North Am Food Anim Prac 10 (2):319-330.
3. Johnson AL, Lamm CG, Divers TJ: 2006. Acquired cervical scoliosis attributed to *Paralaphostrongylus tenuis* infection in an alpaca. JAVMA 229:562-5.
4. Whitehead CE: 2009. Management of neonatal llamas and alpacas. Vet Clin North Am Food Anim Prac 25:353-366.

Reduced UPS shipping rates for ADDL clients

- ADDL has reached an agreement with UPS for submitters to send samples to the West Lafayette Lab at a reduced rate using its Authorized Return Service. Packages will arrive at ADDL the following morning.
- Pre-addressed labels will be provided to you by ADDL.
- Submitter will be billed \$7.00 per package.
- Call us at 765-494-7440 or visit our website at www.addl.purdue.edu to request labels.
- If multiple cases are submitted in a single shipment, the UPS charge will be added to one case.

If you are currently using our histopathology mailers (via U.S. mail) and would prefer taking advantage of the UPS option with its guaranteed delivery time, we will provide you the formalin-filled jars **without an address label** at \$15.00/box of 12.

ADDL Lab Results by

Email (Call ADDL with email address)
Fax
Internet/Web

Laboratory results are available on the Internet. Call us to set up an account or go to our web page

WWW.ADDL.PURDUE.EDU

- Click on Online Reports tab
- Click on Request Info and follow instructions

ADDL Schedule

Purdue ADDL and Heeke ADDL will be closed on the following University holidays in 2011.

May 30.....Memorial Day
July 4.....Independence Day
September 5.....Labor Day
November 24-25.....Thanksgiving
December 23-26.....Christmas
December 30-January 2, 2012.....New Year

GlobalVetLink is now available for electronically requesting and reporting Coggins tests (Equine Infectious Anemia): ELISA and AGID at \$8.50/test with no accession fee). In order to have access to a GlobalVetLink account, contact the company directly at www.globalvetlink.com or phone 515-296-0860.

Non-Profit Organization
U.S. Postage PAID
PURDUE UNIVERSITY

ANIMAL DISEASE DIAGNOSTIC LABORATORY
406 S. UNIVERSITY
WEST LAFAYETTE, IN 47907