

Animal Health Monitor

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Articles of Interest:

- ⇒ **2017 Milk Culture Results**
- ⇒ **Pacific Ag Show Highlights**
- ⇒ **Anticoagulant Rodenticide Toxicity in BC Owls**

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Chlamyophilosis in Kittens by Dr. Stephen Raverty

A queen and group of seven two and half week old domestic short haired kittens were recovered from a dairy barn Nov 15, 2017 and assessed for possible adoption. After rescue, the kittens appeared to be doing well; however, one kitten developed diarrhea and two animals were found dead the following day. Both kittens were presented to the Animal Health Centre for diagnostic evaluation. They were in good body and moderate post mortem condition with generalized pallor of the mucus membranes and subcutaneous tissue (presumptive anemia). There was partially digested milk in the stomachs of both animals and ingesta throughout the small intestine with apparently normal feces in the rectum. In one of the two kittens, there was a moderate amount of clear tan yellow fluid within the chest cavity which did not clot on exposure to air, and the lungs were firm, but compliant.

Representative tissues were harvested and processed for microscopic assessment. The most significant findings were within the nasal cavity, brain, bone marrow, and liver. Microscopic review of the nasal turbinates disclosed necroerosive and ulcerative inflammation with multiple dense submucosal nodular accumulations of lymphocytes and plasma cells with variable amounts of necrotic debris. There was multifocal bronchointerstitial pneumonia with alveolar and perivascular accumulation of edema fluid. Additional findings included a non-suppurative meningitis, myocarditis and cholangiohepatitis. Based on the multi-systemic distribution and nature of the inflammatory infiltrate, an infectious etiology, such as feline calicivirus, feline rhinotracheitis virus (herpesvirus), *Mycoplasma* spp or *Chlamydophila psittaci* were prime considerations.

Aerobic culture of the lung showed a few to light mixed growth of *Streptococcus dysgalactiae* ss *equisimilis*, *Pasteurella multocida* and *P mairii* with

light *Streptococcus* sp from the liver, *P mairii* from the spleen. These isolates were considered secondary opportunists. No *Salmonella* spp were recovered by selective media. Polymerase chain reaction (PCR) screening of a nasal and conjunctival swab was negative for Mollicutes (*Mycoplasma*) and positive for *Chlamydophila psittaci*. Despite the lack of apparent elemental bodies within sections of the nasal turbinates or lung, this result was significant. *Chlamydophila psittaci* is a provincially notifiable disease in poultry with cases reported to the Public Health Authorities and the Canadian Food Inspection Agency. In this case, the BC Centre for Disease Control public health veterinarian, provincial Chief Veterinary Officer and regional health authorities were contacted. The clinician was informed of the diagnosis and the remaining kittens were placed on a course of antibiotics.

Although a specific source of exposure could not be determined in this case, it is likely that wild birds within the barn may have contaminated the environment either through shedding bacteria in feces, urine, saliva, ocular or nasal secretions or feather dust. Inhalation is a prime route of exposure and involvement of these kittens may suggest a potential point source of exposure for humans and other sheep, goats horses, and even cattle on the premises. In many regions of the world, *C psittaci* is a recognized pathogen in cows, which may present as respiratory and neurologic disease (sporadic bovine encephalomyelitis or Buss disease), abortion, polyserositis, and pneumonia. This case is an example of one health approach with detection of an infectious agent in young kittens that may have profound effects on human, wild bird and livestock health.

Prepaid Courier Service Coming to the AHC



COMING SOON

PREPAID COURIER SERVICE

The Animal Health Centre will be offering prepaid courier service to our clients located in British Columbia.

This means you will no longer need to fill out courier slips or pay courier bills directly. We will pay the courier charge and then add it as a separate line item to your invoice from the Animal Health Centre.

Please contact our main reception at 604-556-3003 or toll free at 1-800-661-9903 to obtain more details.

Anticoagulant Rodenticide Toxicity in BC Owls by Dr. Tony Redford



Over the past few months, a significant number of owls submitted to the BC Ministry of Agriculture have had gross lesions suggestive of anti-coagulant rodenticide toxicity and traces of rodenticide compounds detected in the liver.

Most of the affected owls have been barred owls, but other species, such as great horned owls, have also been occasionally affected. The owls have come from widespread locations across Southern British Columbia. While some of the owls have had a single anticoagulant compound detected in the liver, multiple compounds have been detected in the liver of a number of owls. The most frequently detected compounds are brodifacoum and bromadiolone; both of these are potent anticoagulants and are lethal at relatively small doses.

Anybody using anticoagulant rodenticides is reminded to strictly follow application guidelines and to make every effort to prevent access of owls and other animals to the anticoagulants and to rodents that have ingested anticoagulants.

20th Annual Pacific Agriculture Show, Abbotsford Tradex—January 25-27, 2018

The Pacific Agriculture Show is the largest and most important agriculture exhibition in the province. This year marked the 20th Annual Show and was the biggest, by far.

BC's agriculture industry is unique in its diversity and the Show attracts an attendance from all the livestock and horticulture sectors including: dairy, cattle, poultry, equine, hogs, llamas, alpacas, to vegetable, berry, grape, bulb, ornamentals, hothouse, flower and shrub growing and more.

Producers, ranchers and farmers appreciate the Show, as it represents the scope and importance of the industry and lets them investigate and compare the latest technology, trends and techniques available.



The 3-day event showcased the latest and most innovative equipment and technology for the agriculture industry. It featured many important industry meetings including the long-running Dairy Expo and Horticulture Growers' Short Course. New this year to the Show was Agri-Tech Innovation Day—featuring 20 new agriculture tech companies, including drones and robots, and the addition of the Bobcat Square Dance (which was quite the hit).

The event was attended by over 9,000 visitors and there was a record turnout of over 300 exhibitor booths.

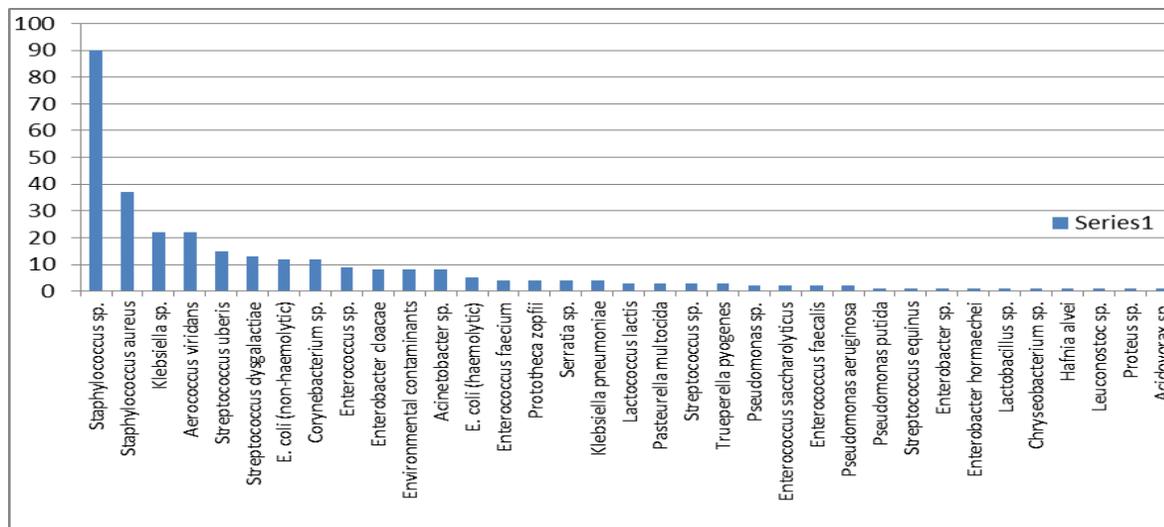


The Ministry of Agriculture booth was represented by staff from the following branches:

- ◆ Plant and Animal Health
- ◆ Sector Development
- ◆ Food Safety and Inspection
- ◆ Business Risk Management
- ◆ Innovation and Adaptation Services

Milk Culture Results by Dr. Jane Pritchard

January 1-December 31, 2017—Results of milk cultures sorted by frequency of isolation.



Between January 1 and December 31, 2017, 269 milk samples (58 submissions) were received for culture and sensitivity at the Plant and Animal Health Centre. Out of the 269 samples submitted, no bacteria was isolated in 56 samples.

2017 Resistance by Isolate	amp	kf	ob	e	xnl	p10	pyr	sxt	tet	# of isolates tested
Staphylococcus sp.	8%	2%	12%	4%	2%	9%	18%	2%	3%	90
Staphylococcus aureus	22%	3%	0%	0%	0%	24%	8%	0%	0%	37
Klebsiella sp.	73%	36%	68%	68%	18%	73%	68%	5%	9%	22
Aerococcus viridans	0%	0%	41%	0%	0%	0%	9%	23%	18%	22
Streptococcus uberis	0%	0%	60%	0%	0%	0%	20%	7%	33%	15

As a comparison, the table below shows the results for 2016. Between January 1 and December 31, 2016, 333 milk samples (87 submissions) were received for culture and sensitivity at the Plant and Animal Health Centre. Out of the 333 samples submitted, no bacteria was isolated in 73 samples.

2016 Resistance by Isolate	amp	kf	ob	e	xnl	p10	pyr	sxt	tet	# of isolates tested
Staphylococcus sp.	9%	0%	7%	2%	0%	11%	13%	0%	5%	55
Staphylococcus aureus	5%	0%	0%	2%	0%	5%	2%	0%	9%	43
Streptococcus dysgalactiae	0%	0%	0%	0%	3%	0%	3%	3%	26%	31
Klebsiella sp.	89%	39%	94%	94%	28%	94%	94%	6%	17%	18
Corynebacterium sp.	13%	0%	33%	7%	0%	13%	27%	7%	0%	15
Aerococcus viridans	7%	7%	73%	7%	0%	7%	20%	40%	40%	15

amp - ampicillin	ob - cloxacillin	xnl - excenel	pyr - pirlimycin	sxt - sulfamethoxazole/trimethoprim
kf - cephalothin	e - erythromycin	p10 - penicillin	tet - tetracycline	

Small Flock Poultry Health Workshops by Dr. Victoria Bowes, Dr. Tony Redford and Clayton Botkin

Small flock poultry ownership is a common practice in British Columbia in rural communities and, increasingly, in urban areas. In the past 5 years, a number of local governments have legalized the keeping of hens (female chickens) in urban communities. With the increasing interest in keeping both backyard and small scale commercial poultry and increasing demand for birds by some of the urban communities, the Ministry of Agriculture expanded its delivery of its Small Flock Poultry Health workshops, supported by *Growing Forward 2*, a federal-provincial-territorial initiative.

Workshop locations are determined by a local expression of interest, and are often in support of a local poultry group or farmers institute.

Since 2015, workshops have been held in Vanderhoof, Langley, Sechelt, Saanich, Vernon, Kamloops, Coombs, Cranbrook, Invermere and Abbotsford. Since 2015, 266 participants have attended a workshop in their region.

The major topics included in each workshop are:

- Introduction to Poultry and Regulations
- Poultry Health and Disease
- Biosecurity
- Food Safety and Salmonella

Sessions have been held in addition to those above in the various regions when there is clear challenge of specific diseases. Usually these are identified through submissions to the Animal Health Centre or through the various private veterinarians in the province.

We also encourage local veterinarians and their staff and support sector staff (feed stores, processors, etc.) to come out to the workshops as well.

Recognizing small flock poultry owners can be a difficult audience to reach, the Ministry will continue to provide these workshops in different communities. All workshops can be modified to fit the audience, enabling us to keep the content relevant to participants, focusing on various aspects of production and health.



Pictured Above: Dr. Bowes Speaking at the Saanich Workshop

If you are interested in hosting a workshop in your area, please feel free to contact one of the staff noted above at the Animal Health Centre. We make every attempt to get out to the various regions in the province every couple years. We can be contacted toll free (BC only) at: 1-800-661-9903.

Growing Forward 2 Funding Ends March 31, 2018.....and CAP Funding Begins

Growing Forward 2 is a five-year federal-provincial-territorial policy framework for Canada's agriculture and agri-food sector. It is the basis for coordinated, cost-shared programs to help the sector become more competitive and innovative.

In British Columbia, the federal and provincial governments will have invested an estimated \$427 million in *Growing Forward 2* from 2013-2018. Please visit the GF2 link under our AGRI website for further details: <https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/agriculture>.

With *Growing Forward 2* coming to an end on March 31, 2018, a new agricultural policy framework will begin April 1, 2018—the *Canadian Agricultural Partnership (CAP)*, also a five-year federal-provincial-territorial policy framework that will run from 2018-2023. Further details to come once they have been finalized.

An Unusual Ulcerative Dermatitis in Pigs by Stephen Raverty¹, Josh Waddington² and Yanyun Huang³

¹Animal Health Centre, Abbotsford, British Columbia

²Greenbelt Swine Veterinary Services, Chilliwack, British Columbia

³Prairie Diagnostic Services Inc, Saskatoon, Saskatchewan

Starting in the spring of 2017, approximately 5-8 percent of 3-5 month old pigs housed in a conventional, naturally ventilated fully-slatted finisher barn developed rapidly progressive ulcerative tarsal lesions, advancing to severe lameness and eventual recumbency. In the initial stages of disease, there were uni- and bilateral small pin-point red skin lesions which progressed within to 1 to 7 days to pronounced subcutaneous swelling and focal to multiple variably sized ulcers. These lesions were almost exclusively noted on the lateral aspect of the tarsus and metatarsus of either or both of the hind limbs of affected animals. Minor lesions attributed to tail-biting were observed on some affected animals, as well as clinically unaffected animals in the same pen and with other herd mates. The ulcers extended deep into the dermis and were occasionally overlaid or peripherally delineated by encrusted exudate and debris (Figure 1).



Figure 1:

Ulcerative dermatitis along the dorsolateral aspect of the metatarsus

Photo courtesy of Dr. Josh Waddington

In more severely affected areas, the ulcers and associated inflammation, fibroplasia and granulation tissue extended deep to and abutted or invested the periosteum, tendons or synovial membranes. A loss of muscle mass throughout the thighs was noted. Based on review of past case observations, these clinical findings may be the first occurrence of this condition recognized on the farm, as well as within other production systems in the Fraser Valley. The farm has been in operation for many years with no recent changes in management practises, flooring, sanitation, disinfection protocols, or feed. Breeding has been primarily by artificial insemination and no recent changes in genetics have occurred. Gross examination was conducted on three 4 month old pigs weighing 59, 60 and 69 kg. All the animals were in good post mortem condition and moderately well fleshed. In all 3 animals, there was a distinct loss of muscle mass in the hindlimbs.

Two pigs had low grade bronchopneumonia and one had moderate enterocolitis. Representative tissues were harvested and submitted for histopathology, routine microbiology and molecular studies. Microscopically, there was ulcerative dermatitis with variable accumulation of fibrinoseous to fibrinosuppurative exudate with superficial accumulations of predominantly extracellular coccobacilli. In the ulcer, there was granulation tissue and fibrosis which often extended to the subjacent periosteum, tendons or synovial membranes. Additional recuts and special stains did not reveal any discernible spirochetes; scattered large blunt rods were intensively positive by silver stain. In one pig, there was moderate suppurative bronchopneumonia with peribronchiolar lymphoid hyperplasia and scattered acute lymphoid necrosis. Mild non-suppurative bronchointerstitial pneumonia was noted in a second pig and in two animals, there was low to intermediate grade subacute enterocolitis. Bacteriology results from tissues submitted from the three pigs were inconsistent. In two animals, *Staphylococcus aureus* with *Streptococcus dysgalactiae* ss *equisimilis* were recovered from skin ulcers with light growth of *Peptostreptococcus* spp isolated by anaerobic culture of one of three skin wounds. No *Histophilus parasuis* or *Salmonella* sp were cultured by selective media and polymerase chain reaction (PCR) studies of pooled tissues did not detect circovirus in tissues from two screened animals or *Mycoplasma* spp from a single tested pig. PCR for porcine reproductive and respiratory syndrome virus (PRRSV) was performed on samples from two animals and one case was positive.

Peptostreptococcus spp has previously been associated with foot abscesses along the claw and accessory digits in suckling pigs housed on woven wire flooring. Microscopically, lesions include necrotic pododermatitis, severe osteomyelitis and tenosynovitis. However, the demographics, clinical presentation and pathologic findings are distinct between this prior case series and current manifestation of disease. In addition to *Peptostreptococcus* spp, *S aureus*, *S dysgalactiae* ss *equisimilis* and *A urinae* were recovered, and these isolates were considered secondary opportunists, rather than primary pathogens.

Ultimately, the disease resolved over time with no new cases observed by farm staff or the clinician. Although a conclusive etiology could not be resolved, should swine practitioners recognize similar clinical presentations in stocks, we would be grateful for any details.

Serology Section at the AHC

The Serology section of the Animal Health Centre (AHC) offers serological testing for a wide range of avian and mammalian pathogens primarily utilizing ELISA (Enzyme Linked Immunosorbent Assay) methods. These tests are useful in measuring antibody response to a particular pathogen as a result of infection or vaccination.

In addition to routine diagnostic testing, the Serology section undergoes proficiency testing conducted by the Canadian Food Inspection Agency (CFIA) and the USDA's National Veterinary Services Lab (NVSL). The Serology section is accredited by the CFIA for Equine Infectious Anemia and *Brucellosis* (BPAT) testing. This lab is also an approved Johne's disease (*M. avium subsp. paratuberculosis*) testing lab, having successfully passed NVSL serology panels since 1999.

Quality of serum samples submitted for serological assays can have a significant impact on final assay results. For example, hemolyzed or lipemic serum can lead to unreliable test results. Here are some guidelines to help ensure the quality of samples submitted for serological testing:

- Only use untreated serum tubes or serum separation tubes for collection.

- After collection keep the blood samples at room temperature until serum has separated from the clot (30-60 minutes).
- Centrifuge tubes to separate the serum from the clot. Pour or draw off serum into clean tubes.
- Ship samples to the laboratory with ice packs to keep sera cold while in transit. If samples cannot immediately be transported to the laboratory, refrigerate the serum at 2–7°C for up to 3–5 days or freeze at 20°C for long term storage.
- DO NOT freeze blood.
- Submit a minimum of 2 ml serum for large animals and 0.5ml serum per bird for poultry.

Please refer to the Serology page of the AHC website for complete submission guidelines, how to send ID lists electronically for submissions of more than 20 samples, test and price list as well as links to avian and mammalian submission forms. www.gov.bc.ca/animalhealthcentre

Calendar of Events

“CANADIAN FEDERATION OF HUMANE SOCIETIES NATIONAL ANIMAL WELFARE CONFERENCE”

“Cats in Canada—A 5-year Review of Cat Overpopulation” - Calgary, Alberta April 22-23, 2018

Opening Plenary Speaker Dr. Toolika Rastogi, CFHS.



This event is open to students in any discipline, veterinarians and vet techs, academics, researchers and scientists, animal enforcement personnel, animal care professionals who work with: companion animals, farm animals or wildlife, staff from humane societies, SPCAs and animal rescues, animal welfare advocates, policy experts, humane education professionals and members of the general public who want to advance their work for animals.



Ministry of
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<http://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/animal-health/animal-health-centre/newsletter>

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