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DIRECTOR’S MESSAGE

It has been some time since we connected with you! You may recall from previous communications that the Abbotsford Agricultural Centre was flooded by the November 2021 atmospheric river event. The Animal Health Monitor was halted while we focused efforts on rebuilding. We are resuming publication of this newsletter to let you know that we are open for business and almost all services are back to normal. Between November 2021 and March 2023, staff provided alternative services to clients and industry, where possible, as sections of the laboratory were refurbished and reopened. As of March this year, we resumed equine necropsy services, so only a few services remain unavailable. In September, we resumed virus isolation techniques and also testing services for Bovine Spongiform Encephalopathy (BSE) and other prion diseases. Due to the remaining repairs for flood damage, we are still unable to offer electron microscopy, but a plan is in place to resume this service soon.

During the same period above, B.C. experienced its worst ever avian influenza (AI) outbreak. We want to acknowledge how hard it has been for the agricultural community during this time. For the laboratory, it was a challenge to support the AI outbreak response while resuming services after the flood. I want to give credit to our staff, who did an amazing job supporting the ministry’s responsibilities for the outbreak while maintaining routine diagnostic services. The AI outbreak increased incoming submissions almost 5 times above normal levels! Thank you to our clients for their patience and understanding, and to our staff for their dedication and hard work serving B.C. and other parts of Canada.

On top of the AI outbreak and resuming services after the flooding, there have been changes in the ministry’s organizational structure. Dr. Joyce Austin assumed the role of Executive Director of the Plant and Animal Health Branch in May 2022. Dr. Austin oversees the Animal Health Centre, Plant Health Unit, and Business Operations Unit. I became the permanent Laboratory Director of the Animal Health Centre in June 2022. In addition, the Office of the Chief Veterinarian was split away from the Plant and Animal Health Branch and Dr. Theresa Burns was recruited as the Chief Veterinary Officer of B.C. in the Fall of 2022. Finally, we hired Dr. Khawaja Ashfaque Ahmad in January 2023 as the new Veterinary Virologist and Head of Virology, Molecular Diagnostics and Transmissible Spongiform Encephalopathies laboratory sections. Please see the details on pages 4-5.

I am happy to report that we have maintained and recertified the Animal Health Centre to meet all of the necessary standards, licenses and accreditations to deliver the highest quality of services. Looking forward, the Animal Health Centre wants to ensure its excellence in accredited animal health diagnostic services. We will continue to invest in technologies to improve our services and to be ready for future animal health issues. Over the next few months, we plan to engage with our clients and laboratory community to solicit feedback on our service levels and to hear your thoughts about potential new services! Please check our website <https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/animal-health/animal-health-centre> for updates and news. You can also sign up for direct Animal Health Centre client news by emailing pahb@gov.bc.ca.

Again, thank you for your support this past year.

-Dr. Tomy Joseph, Director, Animal Health Centre

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Hours of Operation:
 Monday to Friday, 8:30 AM to 4:30 PM



Mission Statement:

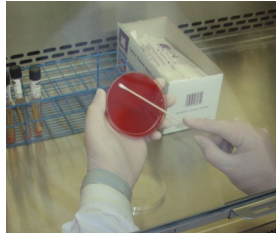
To provide our clients with important information regarding the work being done by the Animal Health Centre and Office of the Chief Veterinarian, as well as events and issues relevant to animal health in British Columbia.

Animal Health Centre Services

The Animal Health Centre has many diagnostic capabilities. An overview of each Section is provided on the next two pages.

Bacteriology

The Bacteriology Section offers extensive microbiological services for the isolation and identification of a wide range of bacterial and fungal pathogens from avian, mammalian, aquatic, reptile, feed, and environmental specimens. The laboratory workup may include aerobic, anaerobic, and microaerophilic culture, as well as enrichment culture for many specific pathogens including *Salmonella*, *Campylobacter* and *Listeria*. Bacterial and fungal organism identification is performed using culturing, biochemical testing, mass spectrometry (MALDI-TOF), and DNA sequencing.

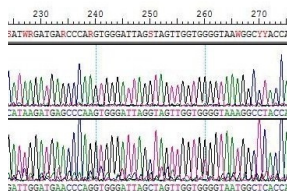


Histology

The Histology Section handles preparation of stained tissue sections mounted on glass microscope slides. Prepared tissue sections encompass all varieties of animal species, including an array of tissues. Tissues are trimmed from samples fixed in 10% neutral buffered formalin, then embedded into molds and thinly sectioned onto glass slides. Most commonly, tissue sections are stained with hematoxylin and eosin (H&E) to assist with differential perspectives of tissue components during examination under the microscope. Specific diagnostic tests using special stains may also be used. For example, the Section can perform immunohistochemistry staining for specific pathogens to assist with direct identification of pathogens in tissues.

Molecular Diagnostics

The Molecular Diagnostics (MD) Section offers diagnostic testing for a wide range of animal pathogens using molecular biology-based methods such as conventional and real-time Polymerase Chain Reaction (PCR) tests and DNA sequencing. The MD Section is certified by the Canadian Food Inspection Agency for the detection of avian influenza (AI), Newcastle Disease Virus (NDV), Foot and Mouth Disease (FMD), Classical Swine Fever (CSF) and African Swine Fever (ASF). The MD Section develops and validates PCR methods for detecting and typing pathogens important to domestic poultry, wild and exotic birds, food and fur-bearing animals, companion animals, wild and zoological species, marine mammals, and aquaculture salmonids.



Parasitology

Individual animal or pooled samples of feces may be submitted (10 grams in a sterile, closed container) for the evaluation and identification of internal parasites, and in some cases, quantification of parasite loads. Results can be provided for many types of parasites, including worms and protozoa, such as *Cryptosporidium* species. Testing includes fecal flotation that examines a sample for a wide range of parasite eggs (ova), Modified McMaster's (also called fecal egg count) that examines a sample for Strongyle eggs and provides a concentration; and Baermann which is a test specific to identifying the presence of lungworm larvae. For sheep and goats, a Strongyle Parasite Panel will provide both a fecal flotation and Modified McMaster's on the same fecal sample should the submitter be concerned for large concentrations of internal parasites. For many parasites, confirmatory molecular or serology testing is available at the AHC.



Pathology

The Animal Health Centre provides diagnostic pathology services for all species of animals, including livestock, small ruminants, poultry, companion animals, exotic pets (rodents, amphibians, reptiles), marine and freshwater fish, free ranging wildlife, and many more species. A Veterinary Pathologist evaluates tissues or whole animal submissions to assess the health status of the animal and determine cause of death or disease and to answer other clinical questions, e.g., reduced productivity. This analysis includes detailed gross post mortem examinations and may include histopathological interpretations and other ancillary tests. For some submissions, the Pathologist may send samples to other laboratories for additional tests, such as for toxicological analysis if a toxin is suspected of causing mortality. A final report incorporates the post mortem observations and results from diagnostic testing performed by the other laboratory sections and external laboratories. A Veterinary Pathologist's role also involves (1) selecting and advising submitters on the appropriate ancillary testing and interpretation of the ancillary test results in light of the greater clinical picture, and (2) identifying and informing veterinarians or producers about animal welfare issues and public health issues relating to zoonotic diseases.

If you are submitting fish from outside the Pacific Ocean watershed, please review this [important information](#).

Plant Health Services:

Along with the Animal Health Centre, the Plant Health Laboratory is also located in the Abbotsford Agricultural Centre at 1767 Angus Campbell Road [Plant Health Laboratory website](#)



Animal Health Centre Services cont'd

Post Mortem

The Post Mortem Section is the central hub of the laboratory. Tissue samples and whole carcasses of animals are processed for necropsies, diagnostic testing, and trimming for histological slides. This Section is able to accept all sizes of animals, including adult cows and horses. The main necropsy area is used for gross examination of case material by a Veterinary Pathologist and to process, photograph, and sample tissues. In addition, the facility includes biological safety cabinets to examine animals or samples with potential zoonotic or foreign animal disease agents. While the laboratory includes full safety measures for disposing of samples and animals properly on-site, arrangements can be made for off-site private cremation of small companion animals.

Quality Assurance and Biosafety

A new Section has been formed in the Plant and Animal Health Branch, titled "Biosafety, Laboratory Operations, and Quality Assurance". The Animal Health Centre's quality assurance and biosafety/biocontainment processes are overseen and managed by staff in this Section. This work supports the Animal Health Centre's laboratory accreditations by the Standards Council of Canada (to the ISO/IEC 17025 standard) and the American Association of Veterinary Laboratory Diagnosticians. In addition, this Section's work ensures the Animal Health Centre maintains its containment licenses from the Public Health Agency of Canada and the Canadian Food Inspection Agency.

Serology

The Serology Section offers routine diagnostic serological testing for a wide range of avian and mammalian pathogens. Serological tests can be used to determine:

1. If an animal has been infected by a particular pathogen,
2. If a specific pathogen is linked to a clinical disease,
3. If an animal has elicited an antibody response following vaccination.

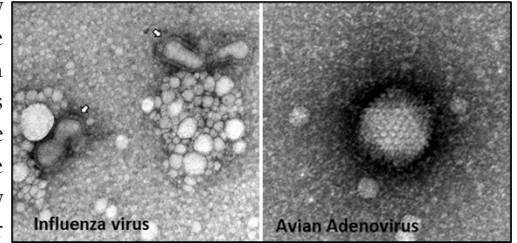
Enzyme linked immunosorbent assay (ELISA), Agar Gel Immunodiffusion, and hemagglutination inhibition are the major serological assays performed. The Serology section is accredited by the Canadian Food Inspection Agency for Equine Infectious Anemia and Brucellosis testing. This lab is also an approved Johne's disease (*Mycobacterium avium subsp. paratuberculosis*) testing facility.

TSE

The Transmissible Spongiform Encephalopathy (TSE) Section re-opened in the Fall of 2023 and provides services to detect Bovine Spongiform Encephalopathy (BSE) and Chronic Wasting Disease (CWD). The TSE section supports the Canadian Food Inspection Agency's mandate to protect the cattle population and consumers in B.C. and the rest of Canada.

Virology

The Virology Section of the Animal Health Centre offers an extensive and complete laboratory service for detecting viral infections in domestic poultry, wild and exotic birds, food and fur-bearing animals, companion animals, wild and zoological species, marine mammals, and aquaculture salmonids. The Virology Section performs virus isolation in cell culture and embryonated chicken eggs and uses techniques such as the Fluorescent Antibody Test, Virus Neutralization, Hemagglutination, and Hemagglutination Inhibition for the detection of viruses, viral antigens, and antibodies produced in response to viral infections. Virology maintains over 19 cell lines for virus isolation. Electron microscopy service for discovering new viruses and detecting known viruses is expected to resume in 2024.



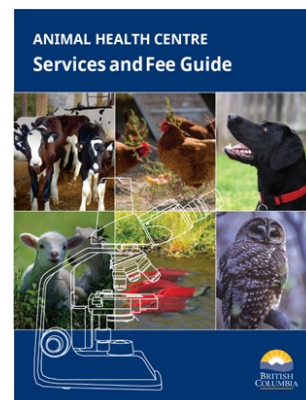
Front Office

Staff at the Animal Health Centre are available to accept submissions from 8:30 AM to 4:30 PM, Monday to Friday. Payment for services can be processed on-site via debit, cheque or credit card. We accept submissions for diagnostic testing and services from all British Columbians and clients from other provinces as well. Everyone must use the appropriate related [submission form](#).

Animal Health Centre Services and Fee Guide

For more information on available services and fees, see the latest [Animal Health Centre Services and Fee Guide](#).

This guide contains detailed information on sample collection, submission requirements, packing and shipping, fees for services, payment options, helpful tips and more.



Introducing New Leadership

We welcome new faces to the Management Team and have highlighted their past experiences that will contribute to excellence in diagnostic services at the Animal Health Centre.

Dr. Joyce Austin, Executive Director,

Plant and Animal Health Branch

Dr. Joyce Austin became the Executive Director of the Plant and Animal Health Branch in May 2022. She came to the Ministry of Agriculture and Food from the Ministry of Environment and Climate Change Strategy (ENV), where she served for more than ten years as the Director of the Analysis Reporting and Knowledge Services Section and before that as the Senior Provincial Laboratory Specialist, overseeing the ENV provincial laboratory and all environmental laboratory operations for the province.



Before joining the provincial government, Dr. Austin completed her PhD and worked as a researcher and instructor at the University of Victoria. She also worked as a clinical pathologist in private and federal clinical laboratories in Brazil for more than 15 years. She is the past Chair of the Board of Directors of the Canadian Association for Laboratory Accreditation and part of the International Organization for Standardization Board. Dr. Austin has a BSc in Biology and Biomedical Science and a diploma in Clinical Pathology with internships in microbiology and microscopy, hematology, and histology. Dr. Austin is also a graduate of the University of Victoria with a PhD in virology and molecular biology.

Dr. Tomy Joseph, Director,

Animal Health Centre

Dr. Tomy Joseph became the permanent Laboratory Director of the Animal Health Centre in June of 2022, which was after providing leadership in the position for more than a year prior to that. Dr. Joseph originally joined the B.C. Ministry of Agriculture and Food in 2013, as the Veterinary Virologist in the Animal Health Centre. Dr. Joseph has an extensive background with over 23 years of leadership, management and supervisory experience in public service in 3 countries. His experience includes 16 years of combined leadership and management experience in provincial veterinary diagnostic laboratories in Manitoba and British Columbia.



After earning his DVM from the College of Veterinary and Animal Sciences, Kerala Agricultural University, India in 1993, Dr. Joseph spent five years in clinical practice. In 1998, Dr. Joseph returned to academia and earned a Masters of Science degree in 2001 and a Doctorate of Science (PhD) degree in 2004 for his thesis research on bovine herpes virus-1 and infectious salmon anemia virus, respectively, from the Atlantic Veterinary College, University of Prince Edward Island. Dr. Joseph then completed three years of postdoctoral research at the avian influenza virus

research laboratory, National Institute of Allergy and Infectious Diseases, National Institute of Health, USA, before beginning his career in veterinary diagnostic virology and research at the provincial Veterinary Diagnostic Services laboratory in Manitoba in 2007.

Dr. Joseph was also an Assistant Professor (adjunct) at the Department of Medical Microbiology, Faculty of Medicine at the University of Manitoba from 2008 to 2018, and currently, he is an Adjunct Professor at the Department of Veterinary Microbiology, Western School of Veterinary Medicine, University of Saskatchewan. Dr. Joseph has a passion for quality management in veterinary diagnostic laboratories and served as the Quality Manager of the B.C. Animal Health Centre from 2014 to 2018. Currently, he is a member of the accreditation committee of the American Association of Veterinary Laboratory Diagnosticians (AAVLD) and an auditor for the Standards Council of Canada (to ISO/IEC 17025 standards) and the AAVLD for accreditation audits.

Dr. Khawaja Ashfaque (Ash) Ahmad,

**Veterinary Virologist, Head of
Virology, Molecular Diagnostics and TSE**

Dr. Khawaja Ashfaque Ahmad joined the Animal Health Centre in January 2023 as the new Veterinary Virologist and Head of Virology, Molecular Diagnostics and TSE. Dr. Ahmad obtained his Doctor of Veterinary Medicine degree from the College of Veterinary Science and Animal Husbandry at the Birsa Agricultural University in India. He completed his graduate studies (Master of Veterinary Science and Doctorate of Science (PhD) degrees) at the Indian Veterinary Research Institute. During his graduate studies, he worked on several viruses, including Newcastle disease, infectious Bursal disease viruses of chickens, and Bluetongue virus infection in sheep.



After completing his PhD, he worked at the Bihar Veterinary College's clinical hospital and provided molecular diagnostic services to clients. Dr. Ahmad did his postdoctoral training at the University of Saskatchewan with a fellowship from the Saskatchewan Health Research Foundation. As well, Dr. Ahmad is a diplomate of the American College of Veterinary Microbiologists (Immunology, Bacteriology/Mycology, Virology). In the time before joining the ministry, Dr. Ahmad worked at the Department of Veterinary Pathology at the Western College of Veterinary Medicine at the University of Saskatchewan. Using conventional virology and next-generation sequencing, he has characterized several viruses circulating in the Canadian poultry industry, including emerging avian reoviruses, infectious Bursal disease viruses, and fowl adenovirus. As a co-investigator, he also leads several projects to develop diagnostic techniques, including molecular and metabolites-based veterinary disease diagnostics.

The Office of the Chief Veterinarian

The Office of the Chief Veterinarian (OCV) is co-located with the Plant and Animal Health Center and works very closely with the laboratory. The OCV provides leadership on animal health, regulated animal and zoonotic diseases, One Health, and One Welfare in British Columbia. It holds primary or partial responsibility for 11 provincial acts and regulations including the *Animal Health Act*, the *Milk Industry Act*, and the *Bee Regulation*.

Day to day examples of our work

Milk Quality: The Dairy Program works every day to ensure BC dairy farms meet the provincial standard of quality milk production.

- Conduct inspections to ensure the quality and safety of raw milk production on provincially licensed dairy farms in BC, and provide producer training or mentoring where needed.
- License and train Bulk Tank Milk Graders, and ensure regulations are followed.



Bee Health: The OCV Apiculture Program works every day to mitigate the impact of honeybee diseases and pests, and to ensure the ongoing viability of the BC honeybee population. To realize these objectives, the program employs several strategies:

- Inspect apiaries and regulate the movement of honeybees to assist industry in preventing and controlling bee diseases.
- Provide ongoing beekeeper education on good management practices and disease control.
- Monitor for pests and pathogens of bees such as the Northern Giant Hornet.

Animal Health: The OCV animal health team is responsible for tracking and responding to serious animal diseases in the province. This includes regulated diseases and new emerging diseases. Examples include:

- Surveillance for avian influenza in wild birds to support poultry industry preparedness planning.
- Tracking disease and sharing information about Salmonella Dublin in dairy cattle.
- Increasing surveillance for serious diseases in the small-holder sector to increase the chance that they are detected before they spread to other farms.



Compliance and Operations: OCV Compliance and Operations staff work every day to ensure compliance with a variety of Ministry Acts and Regulations:

- Invigilate exams for veterinary drug dispensers as per the Veterinary Drug and Medicated Feed Regulation.
- Conduct inspections of veterinary drug outlets.
- Conduct inspections of bison and fallow deer farms throughout the province.

Featured Staff

Dr. Theresa Burns, Chief Veterinarian for BC

As Chief Veterinarian of British Columbia, Dr. Theresa Burns provides provincial leadership on animal health and welfare and One Health.



Theresa was raised in the Fraser Valley. Over the years since she graduated from the Western College of Veterinary Medicine, she has worked as a frontline veterinary practitioner with both large and small animals. Between stints in practice, Dr. Burns completed Master of Science and PhD degrees. She has published on topics such as avian influenza, antimicrobial resistance, emerging diseases, risk assessment and community engagement on animal health. Her experience has given her a strong working understanding of farming practices, food production systems and agricultural communities. She has an ongoing interest in working to achieve real-world solutions to animal and One Health challenges.

Dr. Chelsea Himsworth, Deputy Chief Veterinarian for BC

Dr. Chelsea Himsworth is a veterinarian with graduate degrees in pathology and epidemiology. She came to OCV from the Plant and Animal Health Branch where she worked for 12 years in various roles including Veterinary Pathologist and Leader for Veterinary Science and Diagnostics.



In addition to her role as Deputy Chief Veterinarian, Dr. Himsworth is a Clinical Associate Professor with the School of Population and Public Health at the University of British Columbia and a Regional Director for B.C. with the Canadian Wildlife Health Cooperative.

DISEASE DETECTION PROGRAM FOR SMALLHOLDERS

Do you have <100 pigs or poultry on your premises?

\$75/case
for pigs

\$25/case
for poultry



Disease Detection Program

The BC Ministry of Agriculture and Food's subsidized program for smallholders can help you determine the cause of death of your animals

How to Participate

- Contact your veterinarian
- Or follow submission instructions on the [BC Animal Health Centre website](#)
- Complete the Submission Form
- Discount applied when case received by lab



Ministry of
Agriculture
and Food

To learn more, visit our website



<https://www2.gov.bc.ca/animalhealthcentre>

Notices from the Ministry of Agriculture and Food

AgriService BC

The Plant and Animal Health Branch also provides information on [plant health issues](#) via AgriService BC!

AgriService BC serves and supports BC's farm & food sector by providing consistent, accurate and timely communications regarding Ministry of Agriculture and Food programs, resources and events. Follow AgriService BC on Facebook!

<https://www.facebook.com/AgriService-BC-103287979487810> and QR Code:



Fun/Interesting Facts

Did you know? "OneHealth" is a term that links human, animal and environmental health. Policies following the OneHealth design integrate knowledge of health factors (disease), social systems, agricultural processes, environmental protection, emergency preparedness and infrastructure. Such approaches are better informed about linkages between zoonotic diseases (transmitted between animals and humans) and trade, agriculture, sustainable development, livestock farming, urbanization, habitat uses, wildlife patterns, and food systems.

Acknowledgements

The Animal Health Centre is located on the traditional territories of the Matsqui and Sumas First Nations. The ministry staff gratefully acknowledge they conduct their work on lands important to Indigenous Peoples, including the Stó:lō, whose relationships with the land continue to this day.

All photos in this newsletter were used with the permission of ministry staff. All content was prepared by ministry staff, unless otherwise indicated.