SCOPE OF ACCREDITATION

University of Guelph
LABORATORY SERVICES DIVISION
95 Stone Road West P.O. Box 3650
Guelph, ON
N1G 2Z4

Accredited Laboratory No. 100
(Conforms with requirements of ISO/IEC 17025:2005, RG-LAB, RG-TMDNRT)

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CLIENTS SERVED: All interested parties

FIELDS OF TESTING: Biological, Chemical/Physical


INITIAL ACCREDITATION: 1992-10-06

MOST RECENT ACCREDITATION: 2019-09-04

ACCREDITATION VALID TO: 2022-10-06

Veterinary testing at the Animal Health lab is done at 419 Gordon St (building 89), Guelph, ON N1G 2W1 and the toxicology lab at 95 Stone Road West.

OTHER SCOPE(S)
The laboratory has a separately issued GLP Areas of Recognition scope that can be viewed at http://www.scc.ca/en/search/palcan/. Simply type in the facility name to access the document.

TEST METHOD DEVELOPMENT & EVALUATION AND NON-Routine TESTING

Note: Laboratories accredited under this Program Specialty Area have demonstrated that they meet ISO/IEC 17025 requirements for routine testing under the same product classification as described below.
Chemical Analysis:

Animal and plants (agriculture), food, water and environmental samples
Food and edible products: edible animal fat, dairy products, eggs, meat, edible meat offal and animal blood, serum, plasma, urine, thyroid and retina.
For food allergens, veterinary drug residues, pesticides and pollutants which include the following classes of compounds: anthelmintics, antibiotics, analgesics, antimicrobials, beta-agonists, coccidiostats, hormones and hormone-like substances, industrial pollutants, non-steroidal anti-inflammatories, tranquilizers and pesticides.

1. Development and validation of new testing methodology for the screening and determination of food allergens, veterinary drug residues, pesticides and pollutants in animal tissue, biological fluids, food, water and environmental samples
2. Modification, improvement and validation of published or existing test methodology for the screening and determination of food allergens, veterinary drug residues, pesticides and pollutants in animal tissue, biological fluids, food, water and environmental samples.
3. Development of testing methods for the assessment and validation of commercially available test kits for the screening and determination of food allergens, veterinary drug residues, pesticides and pollutants in animal tissue, biological fluids, food, water and environmental samples.
4. Development and validation of mass spectral techniques for the confirmation of the identity of veterinary drug residues, pesticides and pollutants in animal tissue, biological fluids, food, water and environmental samples.

Microbiology Analysis

1. Development and validation of analytical methods for detection, isolation, identification and characterization of microorganisms including bacteria, viruses, parasites, yeast and molds in food, water and environmental samples.
2. Development, evaluation and validation of new test kits including commercial test kits for the detection and/or enumeration of microorganisms in food, water and environmental samples.
3. Modification, improvement and validation of published or existing methods for detection and/or enumeration of microorganisms in food, water and environmental samples.

Molecular Biology Analysis

1. Development and validation of molecular methods for pathogen detection and/or identification in food, water and environmental samples, and for genetic testing and DNA fingerprinting of microorganisms, plants and animals.
2. Development, evaluation and validation of new test kits including commercial kits for pathogen detection and/or identification in food, water and environmental samples and for genetic testing and DNA fingerprinting of microorganisms, plants and animals.
3. Modification, improvement and validation of published or existing methods for pathogen detection and/or identification in food, water and environmental samples, and for genetic testing and DNA fingerprinting of microorganisms, plants and animals.

Animal health analysis

1. Development and validation of methods for detection, isolation, identification and characterization of microorganism including bacteria, viruses, parasites, yeast and molds in animal samples.
2. Development, evaluation and validation of new tests including commercial kits or reagents for pathogen detection and/or identification in animal samples.
3. Modification, improvement and validation of published or existing methods for pathogen detection and/or identification in animal samples.
Procedures used for Test Method Development & Evaluation and Non-routine Testing:
95S-031 Management of test method development projects
95S-021 Method verification/ validation
95S-032 Management of non-routine tests
AHL-050 Management of AHL test method development projects and non-routine testing - TMD-NRT
AHL-011 Bench and field validation/verification of AHL laboratory tests

Techniques for which the lab is accredited:

1. Chemistry: sample preparation/extraction techniques including; homogenization, SPE, LLE, acid digestion, and soxlet. Methods of analysis/detection including; Charm® tests, wide array of chromatographic based analysis (LC & GC coupled with various detectors including MS and MS/MS), ICP and ELISA
2. Microbiology- sample preparation, culture, detection, enumeration, isolation, identification, biochemical confirmation, immunomagnetic separation, MPN, PCR, and ELISA
3. Molecular biology: DNA/RNA extraction, PCR, DNA sequencing, DNA fingerprinting, detection, identification, genotyping and ELISA.

ANIMAL AND PLANTS (AGRICULTURE)

Foods and Edible Products: (Human and Animal Consumption)

(General)

CHEM-004 Quantitative detection of soy protein by an enzyme linked immunosorbent assay (ELISA)
CHEM-015 Quantitative detection of hazelnut protein by an enzyme linked immunosorbent assay (ELISA)
CHEM-109 Antibiotic residues in honey by LC-MS/MS
CHEM-241 Quantitative detection of sesame protein by an enzyme linked immunosorbent assay (ELISA)
CHEM-255 Quantitative detection of mustard protein by an enzyme linked immunosorbent assay (ELISA)
CHEM-306 Enzyme immunoassay for the detection of Staphylococcus enterotoxins A, B, C, D and E in food and bacterial cultures
IMC-411 Quantitative Detection of Vomitoxin in Cereal Samples by an Enzyme Linked Immunosorbent Assay (ELISA)
IMC-412 Quantitative Detection of Egg Protein by an Enzyme Linked Immunosorbent Assay (ELISA)
IMC-413 Quantitative Detection of Milk Protein by an Enzyme Linked Immunosorbent Assay (ELISA)
IMC-414 Quantitative Detection of Peanut protein by an Enzyme Linked Immunosorbent Assay (ELISA)
IMC-416  Quantitative Detection of Gliadin Protein by an Enzyme Linked Immunosorbent Assay (ELISA)
IMC-428  Quantitative Detection of Almond protein by an Enzyme Linked Immunosorbent Assay (ELISA)
MFHPB-03  Determination of the pH of foods including foods in hermetically sealed containers (MID-233)
MFHPB-20  Isolation and Identification of Salmonella from Food and Environmental Samples (MID-112)
MFHPB-21  Enumeration of Staphylococcus aureus in Foods (MID-115)
MFHPB-30  Isolation of Listeria monocytogenes and other Listeria spp from foods and environmental samples (MID-113)
MFHPB-33  Enumeration of Total Aerobic Bacteria in Food Products and Food Ingredients using 3M™ Petrifilm™ Aerobic Count Plates (MID-103)
MFHPB-34  MFHPB-34 Enumeration of Escherichia coli and Coliforms in food products and food ingredients using 3M Petrifilm™ E. coli count plates (MID-107)
MFLP-15  The detection of Listeria species from environmental surfaces using the DuPont Qualicon BAX® System method and direct plating. (MID-226)
MFLP-16  Detection of Escherichia coli O157:H7 in foods - Assurance GDS for E. coli O157:H7 Tq Gene Detection System (MID-216)
MFLP-28  The Qualicon BAX® System Method for the Detection of Listeria monocytogenes in a Variety of Food (MID-221)
MFLP-29  The DuPont BAX® System Method for the detection of Salmonella in foods and environmental surface samples (MID-217)
MFLP-30  Detection of Escherichia. coli O157:H7 in select foods using BAX® System E.coli O157:H7 MP (MID-220)
MFLP-42  Isolation and Enumeration of the Bacillus cereus group in foods (MID-119)
MFLP-66  Determination of water activity using the Decagon Aqualab (MID-055)
MFLP-74  Enumeration of Listeria monocytogenes in Foods (MID-123)
MID-125  Isolation and identification of E. Coli O157:H7 or NM in Foods (Modified MFHPB-10)
MID-149  Enumeration of Salmonella in Food and Environmental Samples by MPN (Modified MFHPB-20)
MID-150  Enumeration of Campylobacter in Foods and Environmental samples by MPN (Modified USDA FSIS ch6)
MID-157  Enumeration of Listeria monocytogenes in Foods using a Most Probable Number (MPN) Technique
MID-163  Isolation and Identification of Salmonella Species by Immunomagnetic separation (IMS) (Modified MFLP-84)
MID-269  Detection of Top 7 O-serogroups Shiga toxin producing E. coli in beef by BioControl Assurance GDS® MPX Top 7 STEC method
MLG 41.02  Isolation, Identification and Enumeration of Campylobacter jejuni/coli/lari from poultry rinse, sponge and raw product samples (MID-243)
MLG 4C  FSIS Procedure for the Use of a Polymerase Chain Reaction (PCR) Assay for Screening Salmonella in Meat, Poultry, Egg, and Siluriformes (Fish) products and Carcass and Environmental Sponges (MID-219)

TOPS-142  Multi-residue pesticide determination by Liquid Chromatography/Electrospray Ionization-Tandem Mass Spectrometry (LC/ESI-MS/MS) and gas chromatography-tandem mass spectrometry (GC-MS/MS) (Modified CFIA PMR-006-V1.0)

TOXI-024  Elements in food, feeds, forage and other matrices by ICP-OES.
TOXI-064  ICP-MS Analysis of Metals in Foods

**Beverages, Spirits and Vinegar**

DRUGS-217  Determination of Patulin in Apple Juice by HPLC (Modified AOAC 995.10)

**Dairy Products**

DA-205  MilkoScan FT-120 (Fat, protein, lactose and total solids) in milk and cream samples (Modified IDF 141C:2000 ISO9266:1999)

MID-045  Alkaline Phosphatase Testing in Dairy Products by Fluorometric method

(Milk-Unpasteurized)

CHEM-115  Charm QUAD1 Test for Beta-lactams, Quinolones, Sulfonamides, and Tetracyclines in Raw Commingled Cow Milk

CHEM-119  CHARM® Trio Test for beta-lactams, sulfa drugs, and tetracyclines in raw commingled cow milk

CHEM-120  Charm® QUAD2 Test for Macrolides in Raw Commingled Cow Milk

CHEM-121  Charm® QUAD3 Test for Aminoglycosides in Raw Commingled Cow Milk

CHEM-266  CHARM 3SL3 Beta-lactam test for amoxicillin, ampicillin, ceftriaxone, cephalin, cloxacillin and penicillin G validated for raw, commingled bovine milk

CHEM-308  CHARM Sulfon test for raw commingled goat milk at MRL

CHEM-309  CHARM MRL Beta-lactam and tetracycline test for raw commingled goat milk (MRLBLTET2)


DA-301  Enumeration of total bacteria in raw milk BactoScan FC Operation

DA-500  Determination of freezing point by Cryoscope (Modified IDF 108 - ISO 5764)

DRUGS-101  Standard Disk Assay for the Detection of Antimicrobial Inhibitors in Milk
**DRUGS-105** SNAP™ Beta-lactam test kit
**DRUGS-118** Charm Rosa® Tetracycline Test for Detecting Tetracycline Drugs in Milk
**DRUGS-123** Charm II® Macrolide Test for Milk
**DRUGS-237** CHARM Sulfa test for raw commingled cow milk
**MID-043** Goat Milk Testing on the Inhibitor Blocks

**Feeds**

**DRUGS-226** Tiamulin hydrogen fumarate in mixed swine feed by HPLC-UV
**DRUGS-233** Monensin Potency in Type B and Type C Medicated Feeds by HPLC using Post-Column Derivatization
**DRUGS-234** Narasin potency in type B and type C medicated feeds by HPLC using post-column derivatization
**DRUGS-235** Determination of Tilmicosin in Swine Feeds (100 to 600 mg/kg) by HPLC
**DRUGS-236** Determination of Ractopamine Hydrochloride in Swine feed, cattle feed, cattle liquid feed and turkey feed by HPLC
**SNL-058** Water extractable sodium from feed
**TOXI-013** Liquid Chromatographic Determination of Monensin, Narasin and Salinomycin in Feeds using Post-Column Derivatization (Modified CFIA FD-DRUGS-ION04)

**(Fruits and Vegetables)**

**CHEM-069** Acidic herbicides (Phenoxy) in environmental and food matrices by LC-ESI/MS/MS
**TOPS-119** EBDC and dithiocarbamates (Modified CFIA P-RE-053-95-EBDC)
**TOPS-120** Glyphosate and AMPA
**TOPS-121** Ethylenethiourea (ETU) by LC-UV (Modified CFIA P-RE-060-97 (1)-ETU)
**TOPS-122** Amitraz determination in fresh and processed fruits, vegetables and honey (Modified CFIA CSP-006-V1.0)
**TOPS-124** EBDC in Fruits and Vegetables by HPLC-fluorescence (EDA) (Modified CFIA SPR-002-V2.4)
**TOPS-142** See Food and Edible products

**Meat and Edible Meat Offal**

**EML-101** The double separatory funnel procedure for the detection of *Trichinella larvae in pork.*
**CHEM-003** Quantitative determination of aminoglycosides in tissue using LC-MS/MS
**CHEM-041** Multi-residue drug quantitation in animal tissues by LC-MS/MS
**DRUGS-009** Beta-agonists in tissue and retina by LC-MS/MS
### Microbial species ID determination based on 16S/18S rRNA gene or ITS sequencing

- **MOL-020**: Detection of Residual Bovine, Ruminant, Porcine, Animal and Rice DNA in Feed and Food Samples
- **MOL-239**: Speciation of presumptive Campylobacter jejuni and C. coli colonies by multiplex Polymerase Chain Reaction (mPCR) (CFIA)
- **MOL-250**: Quantification of residual bovine DNA in feed samples

### Detection of Residual Bovine, Ruminant, Porcine, Animal and Rice DNA in Feed and Food Samples

- **PDC-015**: Detection of Clavibacter michiganensis subsp. michiganensis using PCR
- **PDC-103**: Detection of Viruses, Bacteria and Fungi in Plant Tissues using ELISA
- **PDC-104**: Baermann Pan Method for Nematode Extraction
- **PDC-106**: Nematode Cysts and Eggs Extracted from Soil

### Veterinary:

**Description of Activities:**

The Animal Health Laboratory identifies unknown hazards in a range of matrices, for example, animal samples, feed, soil, plants. Hazards include infectious agents (bacteria, mycoplasmas, yeast, molds, viruses, and parasites), organic and inorganic elements and compounds. Infectious agents are detected directly or indirectly through various technologies, for example, culture, ELISA and PCR,

Techniques for which the laboratory is accredited:

1. Culture detection of microorganisms
2. Inorganic analysis by inductively coupled plasma Spectroscopy (ICP)
3. Enzyme linked immunosorbent assay (ELISA)
4. Agglutination
5. Polymerase chain reaction

For a current list of methods covered under accredited techniques, contact the University of Guelph Laboratory Services Division Contact.

- **BAC-028**: Culture detection of Salmonella spp. and enumeration of bacterial and fungal colonies in hatchery samples and in poultry environmental samples
- **BAC-029**: Culture detection of *Salmonella Pullorum, Salmonella Gallinarum* and other *Salmonella spp.*
- **CHEM-055**: ICP-MS analysis of metals in tissues
Determination of iodine in raw and processed milk by inductively coupled plasma-mass spectrometry

Scrapie resistance prion protein genotyping

PCR detection of fish viruses


Swine influenza virus - A/H1N1/swine/Ontario/81 HI (sif) or A/H3N2/human/Colorado/77 HI (si3)

Swine influenza virus - A/H3N2/swine/Texas/4199-2/98 HI (si3t)

Polymerase Chain Reaction

- Type A influenza viruses and Avian H5 and H7 Hemagglutinin subtypes
- Avian Paramyxovirus 1 (APMV-1)
- Classical Swine Fever virus
- Foot and Mouth Disease virus

Indirect fluorescent antibody assay (IFA) for the detection of IgG & IgM, IgM or IgG antibodies against *Porcine reproductive and respiratory syndrome virus* (PRRSV)

Notes:

Veterinary testing at the Animal Health lab is done at 419 Gordon St (building 89), Guelph, ON N1G 2W1 and the toxicology lab at 95 Stone Road West.

AOAC: Official Methods of Analysis of the Association of Analytical Community (USA), current edition


RG-LAB: SCC Requirements and Guidance for the Accreditation of Testing Laboratories


IDF: International Dairy Federation

SMEDP: Standard Methods for the Examination of Dairy Products

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Elias Rafoul, Vice President
Accreditation Services
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