

# **Small Ruminant and Camelid Disease Emergency Response Resource Manual**

*Prince Edward Island*

*Small Ruminant and Camelid Emergency Response*

*Advisory Team*

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# Table of Contents

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Section 1: Significant Small Ruminant and Camelid Diseases .....	1-1
Section 2: Disease Incident and Alert Definitions .....	2-1
Level 1 Green/Normal Biosecurity Operations .....	2-2
Level 2 Yellow Alert/ Enhance Biosecurity .....	2-3
Level 3 Red Alert/Emergency .....	2-4
Level 4 Post Emergency Recovery/ Yellow or Red Alert .....	2-5
Section 3: Disease Response Plan .....	3-1
Stage I - Suspicion of a Foreign Animal Disease (FAD) .....	3-1
Actions Taken by Producer .....	3-1
Actions Taken by Herd, Local or/CFIA Veterinarian .....	3-2
Actions Taken by Small Ruminant and Camelid Emergency Response Advisory Team (SRCERAT) .....	3-4
Stage II - Positive Presumptive Diagnosis of Disease .....	3-5
Action Taken by Atlantic Veterinary College Diagnostic Services (AVC-DS) .....	3-5
Action Taken by Producer .....	3-5
Action Taken by the PEIDA .....	3-6
Action Taken by the CFIA .....	3-6
Stage III - Confirmed Diagnosis of a FAD .....	3-7
Action Taken by the CFIA .....	3-7
Action Taken by the PEIDA .....	3-8
Federal Minister of Agriculture Signs and Issues a Declaration of Infection .....	3-8
Action Taken by SRCERAT .....	3-9
Summary of Notification for Stages I, II and III .....	3-10
Section 4: Communication Plan - Crisis Communications for Foreign Animal Disease Outbreaks .....	4-1
Roles and Responsibilities .....	4-1
Producer .....	4-1
Local Veterinarian .....	4-1
AVC-Diagnostic Services .....	4-2
PEISBA/commodity representative .....	4-3
Small Ruminant and Camelid Emergency Response Advisory Team (SRCERAT) .....	4-3

Canadian Food Inspection Agency (CFIA) .....	4-4
<b>Section 5: Human Health Precautions/Considerations.....</b>	<b>5-1</b>
Minimizing Exposure .....	5-1
Eating, Drinking, Handling Food and Smoking.....	5-1
Viral Diseases That Affect Small Ruminants or Camelids, and Humans .....	5-2
Emotions/Fatigue .....	5-2
<b>Section 6: Control Area and Movement Controls .....</b>	<b>6-1</b>
Figure 1. Foreign Animal Diseases Zones .....	6-2
Declared Infected Place .....	6-3
Movement Controls.....	6-3
Infected Zone Within 3km of Any Declared Infected Place .....	6-5
Movement Controls.....	6-5
Surveillance Zone Within 10km of Any Declared Infected Place.....	6-8
Movement Controls.....	6-8
Buffer Zone (between Surveillance Zone and Control Area border) .....	6-10
Movement Controls.....	6-10
<b>Section 7: Biosecurity Measures .....</b>	<b>7-1</b>
Production Facilities: Recommendations to Prevent the Spread and/or Introduction of Infectious Disease.....	7-1
Green/Normal Biosecurity Operations .....	7-2
Yellow Alert/Enhanced Biosecurity .....	7-3
Red Alert/Emergency.....	7-8
Technical Service Personnel.....	7-9
Farm Entry Procedures.....	7-12
Farm Exit Procedures .....	7-13
Return to Base and Sample Submission .....	7-14
Vehicle Washing .....	7-15
Specific Measures for Yellow Alert/Enhanced Biosecurity.....	7-18
Specific Measures for Red Alert/Emergency .....	7-19
Feed Companies and Transporters .....	7-20
Preparation Procedures .....	7-20
Farm Entry Procedures.....	7-25
Barn Entry Procedures .....	7-28

Barn Exit Procedures .....	7-29
Farm Exit Procedures .....	7-31
Return to Base Procedures .....	7-33
At Home Base.....	7-36
Commingling Sites .....	7-38
<b>Section 8: Humane Depopulation Protocols (Humane Euthanasia of Large Numbers of Small Ruminants or Camelids).....</b>	<b>8-1</b>
Preferred methods of euthanasia.....	8-1
Penetrating Captive Bolt and Secondary Kill Step .....	8-1
Non-penetrating Captive Bolt and Bleeding Out .....	8-2
Approved Euthanasia Drugs .....	8-2
Free Bullet .....	8-2
Blunt Force Trauma .....	8-2
<b>Section 9: Disposal Options for Deadstock and Manure .....</b>	<b>9-1</b>
Disposal Options Confirmed Infectious Disease .....	9-1
Disposal Options Without Infectious Disease (Uninfected animals destroyed in a control zone or mass mortalities from a fire, etc.) .....	9-1
Manure and Bedding Disposal from FAD Infected Barns.....	9-2
Manure and Bedding Disposal from Non-infected Barns .....	9-2
<b>Section 10: Cleaning and Disinfecting Protocols for an Infected Premises .....</b>	<b>10-1</b>
Cleaning and Disinfection of Barns .....	10-1
Equipment on Infected Premises .....	10-2
Biosecurity .....	10-3
Cleaning and Disinfection Checklist.....	10-4
<b>Section 11: Appendices.....</b>	<b>11-7</b>
Appendix I Small Ruminant and Camelid Diseases of Interest .....	11-7
Reportable Diseases and Diseases of Economic Importance .....	11-7
Appendix II PEI Small Ruminant and Camelid Emergency Response Advisory Team .....	11-19
Appendix III SRCERAT Roles and Responsibilities .....	11-20
Appendix IV Small Ruminant and Camelid Emergency Response Contacts .....	11-22
Appendix V Disaster Emergency Response Plan .....	11-25
Appendix VI Document Revisions.....	11-28



# Small Ruminant and Camelid Emergency Response Plan *Acronyms*

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AVC	Atlantic Veterinary College
AVC-DS	AVC - Diagnostic Services
C&D	Cleaning and Disinfection
CFIA	Canadian Food Inspection Agency
DA	Prince Edward Island Department of Agriculture
DEECA	Prince Edward Island Department of Environment, Energy and Climate Action
FAD	Foreign Animal Disease
FADES	FAD Emergency Support
JEOC	Joint Emergency Operations Centre
NC-FAD	National Centre of Foreign Animal Disease
WOAH	World Organisation of Animal Health
PEISBA	Prince Edward Island Sheep Breeders Association
PIT	Public Information Team
SRCERAT	Small Ruminant and Camelid Emergency Response Advisory Team





## Introduction

The agriculture industry in Prince Edward Island is a major contributor to the economy of both the province and the country. An outbreak of foreign animal disease (**FAD**) would have widespread impact on Island agriculture, tourism, wildlife, and other sectors resulting in significant losses, if such an outbreak was not dealt with in an effective and timely manner.

In the current system, a planned emergency disease response to a FAD is initiated by the Canadian Food Inspection Agency (**CFIA**), after confirmation of a reportable disease as listed in the *Reportable Diseases Regulations*<sup>1</sup> under section 2(2) of the Canadian *Health of Animals Act*<sup>2</sup>. Since confirmation may take as long as 14 days, there exists a gray zone during which time the disease could spread in the absence of mandated active control measures. Industry personnel traveling to and from farms could spread the disease, unaware that a disease has occurred. In PEI, this situation could result in the spread of the contagion throughout the province in a very short period of time.

This document outlines a **Small Ruminant and Camelid Disease Emergency Response Plan** that could be enacted immediately following suspicion of a disease. A working group comprised of industry and government representatives has used PEI (cattle, swine, and poultry) and Nova Scotia response plans as a model, modifying, updating, and adding information to be consistent with the PEI small ruminant and camelid industries. This working group would like to acknowledge those groups for permission to use their plan.

This document is intended to be a living document and to be updated and further revised as new information and science become available. Significant Small Ruminant and Camelid Diseases

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1 *Reportable Diseases Regulations* <http://laws-lois.justice.gc.ca/eng/regulations/SOR-91-2/>

2 *Health of Animals Act* <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>

## Section 1: Significant Small Ruminant and Camelid Diseases

### Reportable Diseases

A reportable disease is one of significant importance to human or animal health or to the Canadian economy and is outlined in the federal *Health of Animals Act*<sup>3</sup> and *Reportable Diseases Regulations*<sup>4</sup>. Anthrax, Bluetongue (certain serotypes), Brucellosis, Foot and mouth disease, Peste des Petits Ruminant, Rabies, Rift Valley Fever, Scrapie, Sheep and Goat Pox, and Vesicular Stomatitis are listed in the *Reportable Diseases Regulations* (ibid) under section 2(2) of the Canadian *Health of Animals Act* (ibid). **Any suspect or confirmed case of these reportable diseases MUST be immediately reported to the CFIA.** The CFIA will take action to eradicate and control these diseases once the diagnosis has been confirmed. Compensation is paid by CFIA for animals that are ordered destroyed as a result of a FAD.

### Immediately Notifiable Diseases (*have trade implications*)

An immediately notifiable disease is a disease that is exotic to Canada for which there are no control or eradication programs and is outlined in the federal *Reportable Diseases Regulations* (ibid). Anaplasmosis (certain serotypes), Akabane disease, Besnoitiosis, Bluetongue (certain serotypes), Borna, Contagious agalactia, Contagious caprine pleuropneumonia, Heartwater (cowdriosis), Louping ill, Nairobi sheep disease, Enterovirus encephalomyelitis (Teschén disease), Trypanosomiasis, and Wesselsbron's disease and are listed as Immediately Notifiable Diseases in the *Reportable Diseases Regulations* (ibid) under section 2(2) of the Canadian *Health of Animals Act* (ibid). To meet import requirements of trading partners, a herd must be certified as being free from these diseases by the CFIA. **Any veterinary laboratory that detects any of**

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<sup>3</sup> *Health of Animals Act* <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>

<sup>4</sup> *Reportable Diseases Regulations* <http://laws-lois.justice.gc.ca/eng/regulations/SOR-91-2/>

**these diseases is obliged to IMMEDIATELY notify the CFIA and provide full disclosure of the details of the finding.**

**Canada is obliged to report ALL federally reportable and immediately notifiable Diseases to the World Organisation of Animal Health (WOAH).**

For additional information please see disease factsheets in Appendix I.

## Section 2: Disease Incident and Alert Definitions

Regardless of the nature or severity of an incident that affects the small ruminant and camelid industries, the priorities of the industry members will be:

- Human health and food safety
- Control of disease spread
- Accurate and timely diagnosis
- Animal welfare
- Viability of the small ruminant and camelid industries
- Trade issues

Because we are dealing with a live product, environmental emergencies (power outages, ice storms, floods, nuclear accidents, etc.) can ultimately result in mortality and situations that encourage disease conditions and or contamination issues. For this reason, even environmental emergencies are treated in this document as disease response.

There are four different incident levels in this plan. Each incident level requires a different level of biosecurity and co-ordination. The four incident levels are as follows:

**Level 1**      **Green/Normal Biosecurity Operations**

**Level 2**      **Yellow Alert/Enhanced Biosecurity** (during Presumptive stage)

**Level 3**      **Red Alert/Emergency** (during Positive stage)

**Level 4**      **Post Emergency Recovery** (Yellow Alert/Enhanced Biosecurity or Red Alert/Emergency in effect)

## Level 1 B Green/Normal Biosecurity Operations

In **Level 1** the risk of a disease of importance or environmental emergency is not seen to be elevated.

Standard biosecurity, sanitation and communication protocols are in effect.

There is passive surveillance for disease conditions (observation and testing where appropriate) in place.

ALL suspicious cases are to be investigated and/or immediately reported to ensure any outbreak of disease is detected early.

## Level 2 B Yellow Alert/ Enhance Biosecurity

In **Level 2** there is a high suspicion of a disease of importance (presumptive stage) or an environmental emergency on a particular property or within the immediate vicinity.

There has been no official provincial or federal declaration of disease or emergency situation, but the risk of a spreading impact is significantly elevated.

There is an increased level of awareness. Enhanced sanitation and communication protocols are in effect for that property and immediate area, as triggered by the owner/veterinarian/company involved.

The incident may be recognized by the Small Ruminant and Camelid Emergency Response Advisory Team (SRCERAT) as having potential to escalate and the PEI Sheep Breeders Association (PEISBA) and other Industry representatives may declare an Industry **Yellow Alert/ Enhanced** Biosecurity situation for a defined area surrounding the site(s).

## Level 3 Red Alert/Emergency

In **Level 3** there has been an official declaration from Provincial or Federal authorities of definitive diagnosis of a disease of importance or after an event which is determined to be an environmental emergency.

There is declared to be a serious threat to human health, animal health or the viability of the industry.

Depending on the type and severity of the emergency, the government body charged will take responsibility and dictate the plan of action.

The industry will co-operate and institute red alert procedures in biosecurity/sanitation and communication. i.e. avoidance, rerouting, supply management, licensing, trade implications, etc. with regards to the declared zone.

In the case of a reportable disease as listed in the *Reportable Diseases Regulations*<sup>5</sup> under section 2(2) of the Canadian *Health of Animals Act*<sup>6</sup>, the CFIA takes the lead and declares a quarantine area and control zone. Within the zone the **Red Alert/ Emergency** procedures are under full control and supervision of CFIA, outside the zone a minimum of **Yellow Alert/Enhanced Biosecurity** procedures are in force.

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<sup>5</sup> *Reportable Diseases Regulations* <http://laws-lois.justice.gc.ca/eng/regulations/SOR-91-2/>

<sup>6</sup> *Health of Animals Act* <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>

## **Level 4 Post Emergency Recovery/ Yellow or Red Alert**

This is the period after an emergency where the risk of spreading impact of the event is still elevated.

This is the period where confirmation of eradication or assurance of product quality is to be achieved.

A minimum of **Yellow Alert/Enhanced Biosecurity**, sanitation and communication protocols must be maintained.

There may be additional licensure, serological surveillance and traceability requirements imposed.



## Section 3: Disease Response Plan

The disease response plan is divided into three stages:

**Stage I - Suspicion of a Foreign Animal Disease**

**Stage II - Positive Presumptive Diagnosis of Disease, and**

**Stage III - Confirmed Diagnosis of a Foreign Animal Disease.**

### Stage I - Suspicion of a Foreign Animal Disease (FAD)

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A FAD is a transmissible disease which is not present in Canada which may have significant implications to human and animal health as well as the Canadian economy. If a FAD is suspected on a farm due to marked increase in mortality and/or presence of clinical signs, the following actions must be taken:

#### Actions Taken by Producer

- Consult your veterinarian immediately. Provide a complete description of the problem including time of onset, duration and whether things are getting worse or resolving over time. Offer your suspicions as to what the problem might be.
- If the presence of a FAD is highly suspected, contact or have your veterinarian contact the CFIA and the provincial veterinarian. During normal business hours, contact the CFIA through the local office by telephoning **902-566-7290**. After normal business hours, contact the CFIA directly by telephoning **1-506-381-7683**.
- Contact PEISBA or commodity representative (*Appendix II*).

- Enhance biosecurity measures (Section 7), which includes self-quarantine
  - i. Ensure that a visitor log is in place.
  - ii. Service unaffected barns first or dedicate a specific employee to the affected barn(s).
  - iii. Inform ALL family members and employees of the situation. Request confidentiality until diagnosis is confirmed.
  - iv. Suspend all unnecessary traffic. Immediately restrict on and off-farm access by locking gates and requiring phone ahead arrangements for deliveries/pick-ups.
  - v. If a delivery is required, service personnel are to use heightened biosecurity (Section 7).
  - vi. If you are required to leave the farm, change your clothing and footwear; use exit protocol as per your situation (Section 7).
  - vii. Restrict the movement of equipment and personnel from farm to farm, and between barns.
  - viii. Do not move livestock on or off the farm.
  
- Start your own on-farm investigation.
  - i. Gather all relevant documents, including health records and copies of production and mortality records.
  
  - ii. Review and list the on-farm traffic, visitors, and animal movement to and from the premises during the previous 10 days.

### **Actions Taken by Herd, Local or/CFIA Veterinarian**

- Visit the farm and inspect the herd as soon as possible.
  - i. Gather pertinent information by interviewing the herd owner including:
    - Clinical signs

- Status of other animals on farm
  - Other farms in area
  - Recent visitations
  - Recent feed deliveries
  - Vaccination and medication history
  - Movement of animals, products, equipment and personnel onto and off of the farm in the past 10 days
  - Environmental changes (heat, ventilation, humidity)
  - Collect samples or conduct postmortem as appropriate
- ii. If the veterinarian is not suspicious of a FAD:
- Inform lab that samples are coming
  - Advise the producer to enhance biosecurity (Section 7)
- iii. If the veterinarian suspects a FAD, CFIA and the provincial veterinarian must be notified immediately.

**If CFIA has not yet been part of the investigation, at this point, the local vet must immediately inform the CFIA (local office 902-566-7290 or 1-506-381-7683).**

- Ensure that a visitor log is in place
- Restrict movement of livestock, equipment, and personnel from farm to farm
- Avoid unnecessary visitation and deliveries
- If deliveries are required, service personnel are to use heightened biosecurity (Section 7)
- If required to leave farm, use exit protocols
- Do not go to another farm unless approved by CFIA

### **Actions Taken by Small Ruminant and Camelid Emergency Response Advisory Team (SRCERAT)**

- The Provincial Veterinarian will alert SRCERAT members on stand-by
- Confirm availability of SRCERAT members, personnel, facilities, equipment, etc.

## Stage II - Positive Presumptive Diagnosis of Disease

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A positive presumptive diagnosis can be declared by CFIA under one of the following two situations:

1. In the absence of any management or environmental problem, a high and sudden increase in mortality with:
  - a. Clinical signs compatible with FAD, or
  - b. History of significant contact with a confirmed infected premises or people from an infected area

and/or

2. A positive result on a screening test for a FAD.

**If initial diagnoses suggest the presence of a serious disease, the following actions are to be taken:**

### Action Taken by Atlantic Veterinary College Diagnostic Services (AVC-DS)

In the case of a FAD (*see Section 2 for information on FADs*):

- Report suspicious preliminary diagnostic results to CFIA, the Prince Edward Island Department of Agriculture (PEIDA), the producer, and the producer's veterinarian.

### Action Taken by Producer

- Contact PEISBA or commodity representative.
- Contact shearers, processors, other technical service providers, and other downstream sites who may have received small ruminants or camelids.

## Action Taken by the PEIDA

- Notify SRCERAT and convene a meeting within 24 hours.

## Action Taken by the CFIA

- Contact the producer and/or private veterinarian and provincial veterinarian to discuss the case.
- Begin investigation.
- Collect samples and/or preliminary samples from AVC-DS and forward them to National Centre of Foreign Animal Disease (NC-FAD).
- Declare an infected place on index farm (*this may extend to neighboring farms in high density areas; infected zones may be enforced if there is a declaration of disease, i.e., Stage III*). This is to facilitate biocontainment and movement control.
- Commence eradication activities - determined on a case-by-case basis but may include:
  1. Evaluation and risk assessment
  2. Depopulation of herd
  3. Disposal
  4. Cleaning and disinfection of the premises

## Stage III - Confirmed Diagnosis of a FAD

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Upon confirmation of a FAD by the NC-FAD in Winnipeg, the federal Minister of Agriculture would make an official declaration of disease under section 27 of the federal *Health of Animals Act*<sup>7</sup>. A Control Area regulating the movement of persons, animals, things, and conveyances into, out of and within the areas established. Actions to be taken are as follows:

### Action Taken by the CFIA

- Notify the producer and the PEIDA of the test results.
- Continue emergency response logistics:
  - Activate Emergency Response Teams.
  - Activate/expand Operations Centres.
  - Activate/expand Incident Command Post(s).
- Full implementation of the Foreign Animal Disease Emergency Support (**FADES**) plan (*federal/provincial agreement that provides a framework for provincial and municipal support of the federal disease control efforts*).
- Establish internal/external communications.

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<sup>7</sup> *Health of Animals Act* <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>

## Action Taken by the PEIDA

- Notify the PEISBA and commodity representatives of the result.
- Notify and activate Small Ruminant and Camelid Emergency Response Advisory Team (**SRCERAT**) members of the result (*Appendix II*).
- Establish internal/external communications.

## Federal Minister of Agriculture Signs and Issues a Declaration of Infection

The Minister may:

- Define a control area, including zones.
- Define movement controls within and/or between defined zones (*Section 4*)
- Order the establishment of Cleaning and Disinfection (**C&D**) stations at strategic locations
- Order depopulation and oversee disposal as follows:
  - F Depopulation of all susceptible animals is to be undertaken using World Organisation for Animal Health (**WOAH**) approved method (*Section 11*)
  - F Disposal method to be approved by CFIA in co-operation with Department of Environment, Energy and Climate Action (DEECA)
- Order C&D of premises
- Monitor recovery for an appropriate period post last positive case



- Remove control area when an outbreak is declared over

### Action Taken by SRCERAT

- Activate the full SRCERAT team and establish the Joint Emergency Operations Centre (**JEOC**)
- Schedule meetings
- Communication (*two-way*) with the lead authorities and with the PEISBA and commodity representatives
- Issue talking points to anyone who may have contact with the media

## Summary of Notification for Stages I, II and III

### Stage I - Notification

If a Veterinarian (Private or CFIA) suspects\* a FAD on a:

1/ Commercial herd

- Private veterinarian notifies CFIA
- CFIA notifies PEIDA
- Producer notifies PEISBA/commodity representatives, family members/employees and any service providers

2/ Non-commercial herd

- If CFIA visits the operation, CFIA notifies PEIDA
- PEIDA notifies the PEISBA/commodity representative office(s)

\*Suspects refers to the presence of clinical signs and is not based on a presumptive diagnostic test

### Stage II - Notification

If the screening test for FAD at AVC-DS is positive or if the CFIA Vet concludes that the signs are compatible with a FAD:

## 1/ Commercial herd

- AVC-DS notifies CFIA, PEIDA and the producer (and the producer's veterinarian)
- Producer notifies the PEISBA/commodity representative, the feed company, and the trucking company
- PEISBA/commodity representatives notify other Boards/Associations
- PEIDA notifies SRCERAT (Appendix II) and convenes a meeting within 24 hours

## 2/ Non-commercial herd

- AVC-DS notifies CFIA, PEIDA and the producer
- PEIDA notifies the PEISBA/commodity representative (and other stakeholders, i.e. feed companies)
- PEIDA notifies SRCERAT and convenes a meeting within 24 hours

## **Stage III - Notification**

If the test is confirmed positive by the NC-FAD in Winnipeg:

- CFIA (local) notifies the producer and PEIDA
- PEIDA notifies the PEISBA/commodity representative (Appendix II) and activates the SRCERAT (see Appendix III)
- PEISBA/commodity representatives notify associated stakeholders

## Section 4: Communication Plan - Crisis Communications for Foreign Animal Disease Outbreaks

### Roles and Responsibilities

#### Producer

1. When a problem with the herd is observed, the producer will contact their veterinarian and ensure that samples are sent to AVC-DS.
2. Based on AVC-DS or veterinarian recommendations, the producer will:
  - a. **Implement** self-quarantine **Yellow Alert/Enhanced Biosecurity**.
  - b. **Inform** and **document** ALL services that have visited the farm over the past 48 hours of **Yellow Alert/Enhanced Biosecurity**.
  - c. **Cancel** ALL service visits to the farm within the next three days of **Yellow Alert/Enhanced Biosecurity**.
  - d. **Inform** PEISBA/commodity representative of possible disease problem and agree to supply ALL contact information.

#### Local Veterinarian

1. **Visit** the farm for investigation, post-mortem, diagnostics.
2. **Relay** suspicions and/or tentative diagnosis to owner.
3. **Inform** the CFIA and Provincial Veterinarian of suspicion of disease of importance.

4. **Submit** samples to AVC-DS, Charlottetown along with farmer information.
5. Based on suspicions, the local veterinarian will:
  - a. **Request** permission from farmer to alert industry and invoke **Yellow Alert/Enhanced Biosecurity**.
  - b. Highly **recommend** that the farmer contact the PEISBA/commodity representative about possible disease of importance.
  - c. Highly **recommend** that the farmer contact ALL service/input providers that have been on the property in the last 48 hours.
  - d. Highly **recommend** that the farmer contact ALL service/input providers that will be visiting the property within the next three days.
  - e. If farm is a **non-commercial** farmer who agrees to alert industry, advise him to **contact PEIDA**.
  - f. Recommend no livestock be moved off premises.
  - g. Not visit another farm.

## AVC-Diagnostic Services

1. Determines through preliminary testing whether samples support a disease of importance:
  - a. If negative, contact the person who submitted the samples and advise that NO further action is required.
  - b. If testing supports suspicion. AVC-Diagnostic Services will:
    - i. **Contact** the person who submitted the samples (farmer/service person/vet) and **advise** that **Yellow Alert/Enhanced Biosecurity** be put in place or continue if already in place.
    - ii. **Alert** the CFIA who collects samples for AVC-DS and for NC-FAD, Winnipeg. **Yellow Alert/Enhanced Biosecurity may continue** as is or it **may change** to **Red Alert/Emergency**.
    - iii. **Alert** the PEIDA of suspicion of disease of importance.

## PEISBA/commodity representative

1. Keep ALL members **up to date** on disease information.
2. Ensure that the media has access to **accurate and current information** of the disease outbreak as it relates to their sector.

## Small Ruminant and Camelid Emergency Response Advisory Team (SRCERAT)

1. **Gather** at the JEOC office in Charlottetown to assemble the team and bring forth the GIS/GPS information and membership lists.
2. **Generate** a 3 and 10-km radius GIS/GPS map around the suspect farm. Make maps and associated data **available to CFIA as soon as possible**.
3. **Advise** CFIA that SRCERAT is in place.
4. **Inform farmers** within a 10-km radius (dependent on the disease of concern) of identified farm of **Yellow Alert/Enhanced Biosecurity** and/or **Red Alert/Emergency** and **recommend** heightened biosecurity be put in place.
5. **Inform feed manufacturers** of the 10-km radius area involved under **Yellow Alert/Enhanced Biosecurity** and/or **Red Alert/Emergency** and **recommend** heightened biosecurity be put in place.
6. **Inform processors** of the 10-km radius area involved under **Yellow Alert/Enhanced Biosecurity** and/or **Red Alert/Emergency** and **recommend** heightened biosecurity be put in place.

7. **Inform** remaining organizations on the **Emergency Industry Contact List** (Appendix IV) of the 10-km radius area involved under **Yellow Alert/Enhanced Biosecurity** and/or **Red Alert/Emergency** and **recommend** heightened biosecurity be put in place.

## Canadian Food Inspection Agency (CFIA)

1. **Submit** additional samples to the National Centre for Foreign Animal Diseases and to AVC-DS.
2. Based on confirmation and/or suspicion, the CFIA will invoke the **Emergency Preparedness Plan** and will:
  - a. Work under **Yellow Alert/Enhanced Biosecurity** or Invoke **Red Alert/Emergency**
  - b. **Quarantine** farm
  - c. **Alert** Health Canada
  - d. **Alert** PEIDA
  - e. **Alert** AVC-DS
  - f. **Alert PEIDHW in case of zoonotic disease**
  - g. **Alert** all FADES participants
  - h. **Alert** SRCERAT, who alert industry
  - i. **Alert** Media when confirmed

The CFIA operates under its own Emergency Preparedness Disease Plan, but it is suggested that they form partnerships with industry to improve communication and information transfer during a disease outbreak:

1. CFIA will forward **guidelines** and **protocols** for expected best management practices to provincial, local, and industry representatives.

Protocols address the **notification** of suspected FAD, **movement** restrictions and **quarantines**, vehicle **cleaning** and **disinfection**, sanitary and other procedures at infected premises, methods of **destruction**/euthanasia, **disposal**/composting, sentinel animals/**restocking**, and **valuation** and **compensation** payments.

2. Provide a FAD **outbreak contact list** that will be distributed to the provincial veterinarian's office, the SRCERAT, national, provincial, local, and industry representatives, laboratory officials and local practitioners.
3. **Work with SRCERAT.** SRCERAT will be available to provide specialized knowledge and training, advise on industry infrastructure, industry politics and relationships and provide connections to other specialists, and will be available as consultants on disease strategy and control as it pertains to the small ruminant and camelid industries.

SRCERAT will produce **reports** and **forward information** on disease location/spread so industry can implement stricter biosecurity measures, including truck rerouting and enhanced disinfection procedures to industry.

4. Create a **Public Information Team** (PIT) to produce information for public use. The PIT shall consist of appropriate representatives from **CFIA, PEIDA, SRCERAT, PEIDHW** (in the case of zoonotic disease) and the small ruminant and camelid **industry** including **farmers** and **communications officer(s)**. Their aim is to provide enough information to the media to prevent them from going into quarantine areas by **providing adequate video footage, interviews etc.**
5. In addition to information from CFIA, **SRCERAT will electronically maintain and forward copies of reports** and forward them to the PIT, which may be used in developing public releases.



6. The PIT will prepare and electronically maintain a **copy of press releases and a time-line (log)** of public information activities.
7. The spokesperson for the PIT will **brief the news media** as new information becomes available. In some cases, briefings may be pre-scheduled to occur at designated times.
8. Information released to the public should be **timely** and include **at least** the following general information:
  - a. **Nature** and **extent** of the emergency.
  - b. Impacted or potentially **affected areas** of the province.
  - c. Human health **implications** or lack thereof.
  - d. **Activities** being carried out by government officials and industry leaders **to respond** to the outbreak or mitigate its effects.
  - e. **Assurance that food safety is unaffected.**
9. The PIT will **monitor** national, provincial, and local news broadcasts to ascertain if information released is being reported **accurately**.
10. The PIT will counter unfounded rumors with the preparation of **factual information**, which can be released to the public in a timely manner. Previously prepared documents on FADs, biosecurity, movement controls, destruction and disposal etc. will **speed up response time**.
11. The use of radio, television and social media may include **prepared announcements, interviews, question and answer sessions, live footage, up to date websites**, posts, tweets, and so forth depending on the circumstances. **Tele-seminars** effectively deliver important information in a biosecure way. Information released may also include **newspaper inserts** or supplements, which provide detailed information the public could use, and

information about the steps being taken by the province and industry to protect them.

12. After the outbreak, **public information records will be collected** by the PIT and filed. All public information media releases will be maintained in an electronic format when possible.
13. After the outbreak, information records will be **filed by SRCERAT**. **ALL** industry information reports will be maintained in an electronic format when possible.
14. After the outbreak, industry will have access to **ALL** files for developing educational training seminars and workshops. These are intended to maintain **awareness** of the disease both within the veterinary profession and in the agricultural community. Disease awareness campaigns should be targeted primarily at **stock owners** and at **non-professional personnel** who regularly visit herds. The campaigns should emphasize the following:
  - importance of the FAD,
  - clinical signs,
  - importance of prompt notification.
  - epidemiological inquiries (tracing and surveillance), and
  - infected premises procedures including biosecurity, sanitation, destruction, and disposal.
15. After the outbreak, CFIA will seek input from SRCERAT when and if government policies regarding infectious diseases are changed.

## Section 5: Human Health Precautions/Considerations

Public health and/or occupational health officials should be involved in the response to small ruminant and camelid disease emergencies, or at the very least **MUST** be consulted, to help minimize the risk to human health and where appropriate, prevent zoonotic disease transmission (i.e., diseases that can be transmitted between animals and humans).

**Basic biosecurity precautions should be followed** to ensure that persons involved in emergency response or routine work with small ruminant and camelid animals, minimize their risk of exposure to pathogens (disease-producing agents). Feces and urine (i.e., droppings); secretions from the mouth, nostrils, and eyes; other body fluids, body parts and aerosols from small ruminant and camelid animals **can ALL carry pathogens that could pose a risk to human health.**

### Minimizing Exposure

Exposure to MOST small ruminant and camelid pathogens can be prevented by wearing protective clothing and waterproof footwear dedicated to the farm, and by washing hands prior to entering and leaving the farm. Protective clothing and footwear should be removed after working with animals or being in areas where animals are housed or have been held. Contaminated clothing should be washed with soap and hot water, and footwear should be cleaned and disinfected with an appropriate disinfectant prior to entering or leaving.

### Eating, Drinking, Handling Food and Smoking

Persons should **REFRAIN** from eating, chewing gum, drinking, or smoking while working with animals or in barns where animals are being housed or have been held. After animal contact, people should preferably shower and wash their hands thoroughly with soap and hot water, or at the very least apply an alcohol gel disinfectant to their

hands before eating, drinking, handling/preparing food, or smoking. This will help to minimize the risk of acquiring bacterial zoonotic infections.

### **Viral Diseases That Affect Small Ruminants or Camelids, and Humans**

For viral diseases that can affect both small ruminant and camelid animals and humans (e.g., Vesicular Stomatitis) and that can be transmitted by inhalation or contact with mucous membranes, protective eye wear, face masks, and possibly full protective biohazard suits may be REQUIRED. Some bacterial diseases may also mandate similar protection.

Good quality protective masks and eyewear may also be required in barns where ammonia levels are high or where other noxious odours (e.g., from decomposing dead animals) are present.

### **Emotions/Fatigue**

Emotional support may be required for persons involved in the mass depopulation of animals, and for the owners of herds suffering high losses or requiring mass depopulation. Fatigue may put emergency responders at greater risk of making judgement errors and being exposed to potential pathogens.

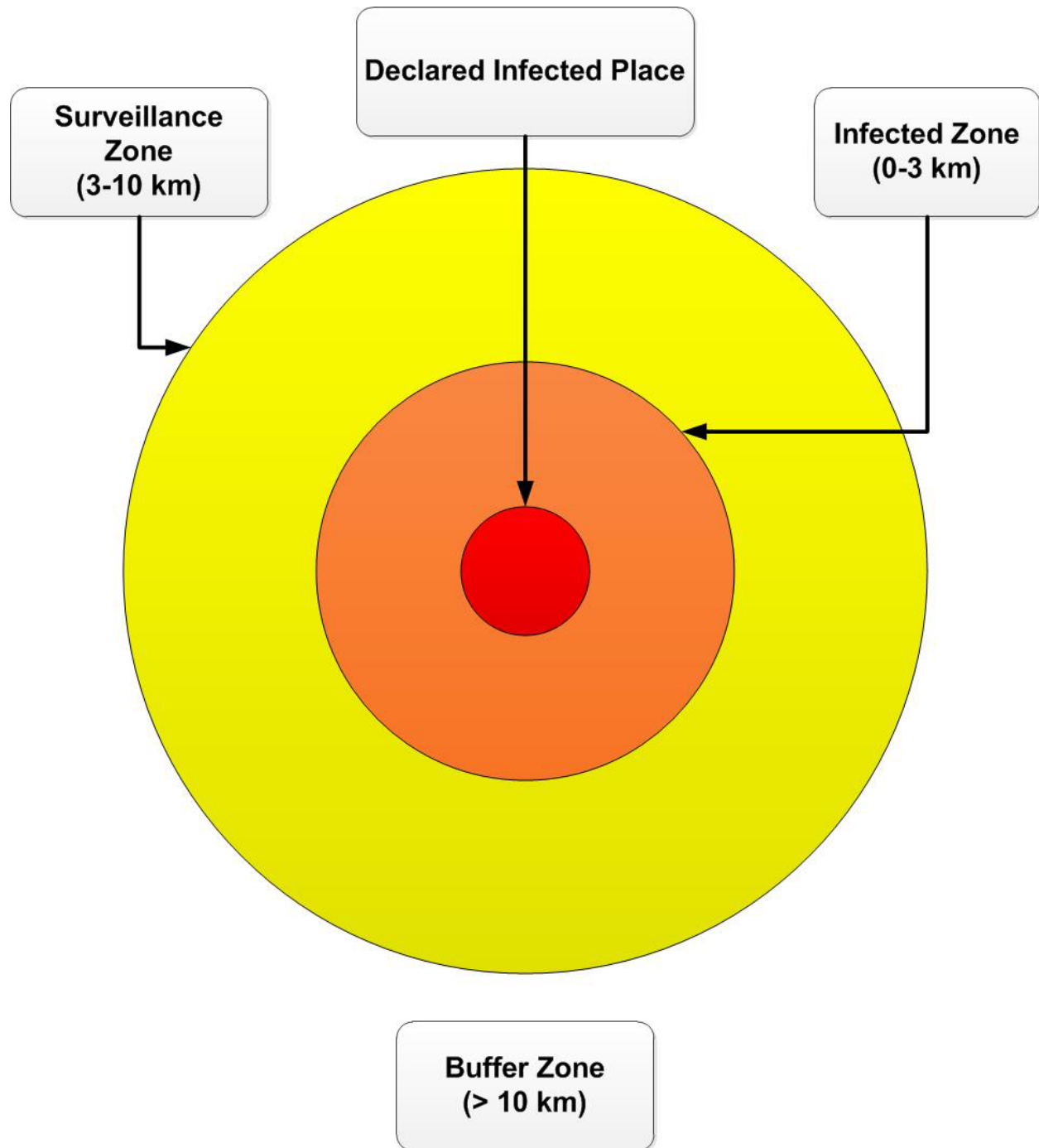
For emotional support and crisis intervention, individuals can contact The Island Helpline (1-800-218-2885).

## Section 6: Control Area and Movement Controls

For a FAD, the Control Area and movement controls are monitored and enforced by the CFIA, and for a provincially named disease, by PEIDA. As these controls will be specific to the disease situation, *this section is intended as a guide to what might happen in a real outbreak*. A Declared Infected Place will have specific movement controls in place. An infected Zone will be determined within 3km of any declared infected place. A Surveillance Zone is defined as the area that surrounds the infected zone and should be at minimum 10 km wide. A Buffer Zone may be established for the purpose of vaccination. The infected zone together with the surveillance zone and buffer zone are collectively referred to as the Control Area (Figure 1). If a Control Area is declared, strict movement controls will be invoked for the Infected Zone, the Surveillance Zone, and the Buffer Zone. In order to facilitate the eradication program, the Control Area will be determined considering natural barriers and roadways.

Prior to the declaration of a Control Area, the CFIA will liaise with provincial and regional industry representatives to impose a Voluntary Cease Movement. The declaration of a Control Area prescribes the initial restriction of movement and other imposed conditions on places, risk goods, conveyances, and risk activities. This will be referred to as an **Animal Standstill**, the purpose of which is to minimize the risk of significant disease spread. It is anticipated that the Control Area will be restricted to a province or part of a province.

**Figure 1. Foreign Animal Diseases Zones**



All zones are collectively under the Control Area

## Declared Infected Place

A Declared Infected Place may be an infected premises, exposed premises, control premises or simply premises in close proximity to infected premises.

## Movement Controls

### a. **Animals**

- Prohibited from moving on or off premises except under license from CFIA, if a Federal reportable disease. Licensure may include pre-movement surveillance testing.

### b. **Animal products and byproducts**

- Prohibited from moving on or off premises except under license from CFIA.

### c. **Feed**

- Movement of feed out of infected premises is prohibited, if considered as a potential source of pathogen.
- Contaminated feed (or feed suspect for contamination) will be destroyed, preferably on site.
- Feed may be delivered to suspect premises under license, subject to strict quarantine and decontamination procedures on entry/exit from animal premises.
- Feed mills and slaughter plants that are epidemiologically linked (contaminated) will be considered separate infected premises. Appropriate quarantine and movement controls will apply before and after declaration.

### d. **Manure and Bedding and Deadstock**

- Prohibited from moving on or off premises except under license from CFIA.

e. **Equipment and Vehicles**

- May only be removed from infected premises after thorough C&D.  
Protocols will be provided.

f. **Pets**

- Dogs, cats, and other non-susceptible potential spreaders should be confined.
- If moved, they should be sponged or sprayed with 2% acetic acid solution and rinsed thoroughly.

g. **Personnel**

- Personnel may leave the premises using a personal vehicle after decontamination of the vehicle. Clothes, footwear, and any other materials should be left on the infected premises. If these items need to be removed from the infected premises, they **MUST** be decontaminated (strict biosecurity).
- All people leaving should shower and decontaminate prior to leaving an infected premises.



## Infected Zone B Within 3km of Any Declared Infected Place

The Infected Zone involves a 3km radius from any declared infected premises. More than one infected zone might be determined. This zone around the infected premises is subject to intense disease/ movement controls.

Limits of the infected zone(s) can be established as appropriate (the WOAHP minimum is three km).

The infected zone does NOT need to be circular but can have an irregular perimeter to follow natural barriers and roadways B provided that the boundary is at least the designated distance from any infected premises.

Prior to ministerial declaration of a Control Area, pre-movement surveillance testing and movement under license of animal, animal products may occur.

**After ministerial declaration of a Control area, ALL conditions described for the infected premises will apply to ALL premises in the infected zone.**

## Movement Controls

### a. Animals

- NO susceptible animals will be allowed to move onto or from any premises within the infected zone without a license.
- ONLY animals from premises with no epidemiological links to known infected places or high-risk premises can be moved, under license, for slaughter at an approved site within the infected zone. These herds will be inspected prior to movement and pre-movement surveillance testing will be performed.

**b. Products and By-Products**

- Prohibited from moving in or out of infected zone except under license.

**c. Feed**

- Movement of feed out of the infected zone is prohibited, if considered a potential source of pathogen.
- Contaminated feed (or suspected) will be destroyed, preferably on site.
- Feed may be delivered to suspect premises under license, subject to strict disease control and decontamination procedures on entry/exit from the premises.
- Feed mills that are epidemiologically linked (contaminated) will be considered separate infected premises. Appropriate disease and movement controls will apply.

**d. Vehicles**

- Vehicles used to transport animals or animal products within the infected zone MUST undergo thorough C&D at an approved station prior to leaving zone.

**e. Livestock**

- Livestock other than small ruminants and camelids are also included in movement restrictions but may move under license to slaughter at an inspected abattoir. Issuance of license will be contingent on procedures used to prevent the spread of disease.

**f. Small Ruminant and Camelid Markets, and other commingling sites**

- Live markets, sales, assembly yards, community pastures, fairs, zoos, and other small ruminant and/or camelid concentrations will be closed.
- If small ruminants and camelids within these concentrations are known to be infected, they may be ordered destroyed.

**g. Personnel**

- Veterinarians and other industry personnel working in the infected zone should NOT visit small ruminant or camelid premises in any other zone.

- Strict biosecurity protocols **MUST** be followed before and after any visits within the infected zone.
- Owners of premises within the control area are responsible for compliance with movement restrictions, biosecurity, and C&D protocols. The CFIA will issue a notice of biosecurity requirements that apply to the entire control area.

**h. Manure and Bedding**

- Movement of manure and bedding from infected premises, or out of the infected zone, is prohibited, except under license.

**i. Preservation of Genetic Stock**

- Preservation procedures of valuable genetic stocks of small ruminants and camelids, and exotic pets and animals, may be considered by CFIA. These preservation procedures would be at the owner's expense.

**j. Processing Plants**

- Plants within the infected zone can receive animals for slaughter under license.
- Licensed transportation of animals to slaughter **MUST** follow CFIA approved routes.
- **NO** employee should have contact with small ruminants or camelids outside working hours at the plant.
- Strict C&D protocols need to be in place for **ALL** personnel leaving the plant.
- Waste products for further processing can be moved under license in a closed, leak-proof vehicle following approved routes.

## Surveillance Zone B Within 10km of Any Declared Infected Place

The Surveillance Zone is defined as an area that surrounds the infected zone, being 10km from any infected place (based on WOAHP standards).

The distribution of susceptible species, natural barriers, traffic routes and processing plants are important factors that should be considered in determining boundaries.

### Movement Controls

#### a. Animals

- Movement of animals is permitted within the surveillance zone.
- Small ruminants and camelids can move under license to a processing plant inside/outside this zone.

#### b. Vehicles

- Vehicles used to handle or transport animals MUST undergo thorough C&D under supervision or satisfaction of CFIA.
- Vehicles used to handle or transport animals must follow CFIA approved routes.

#### c. Processing Plants

- Processing plants may receive small ruminants and camelids under license from within the surveillance zone.
- Animals from outside surveillance zone can be slaughtered at a plant within the surveillance zone.
- Vehicles used to transport animals from outside the surveillance zone MUST undergo C&D prior to leaving zone and follow CFIA approved routes.

- Processing plants need appropriate protocols for ALL personnel and equipment leaving the plant.

d. **Feed**

- Movement of feed out of the surveillance zone is prohibited except under license.

e. **Veterinarians**

- Veterinarians within this zone **MUST strictly follow** biosecurity protocols.

## Buffer Zone (between Surveillance Zone and Control Area border)

A Buffer Zone is a zone within the control area between the boundaries of the Surveillance Zone and the outer boundaries of the Control Area. A buffer zone may be established within the control area, usually for the purposes of vaccination and may vary according to the vaccination strategy.

## Movement Controls

### a. Animals

- Movement of animals within the buffer zone is under license.
- Movement of animals into the buffer zone is under license.
- Producers MUST keep records of ALL animal movements.

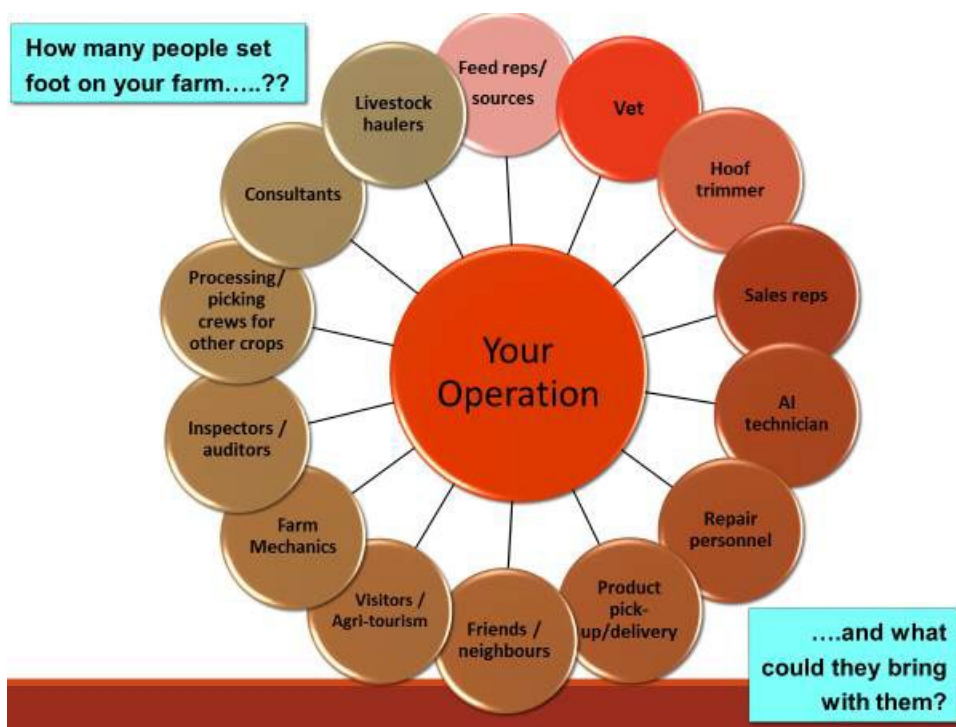
### b. Processing Plants

- Movement is under license without restriction into or within buffer zone.

## Section 7: Biosecurity Measures

### Production Facilities: Recommendations to Prevent the Spread and/or Introduction of Infectious Disease

Based on current understanding of the sources and transmission of most infectious diseases of animals, the following recommendations have been designed to prevent the spread between premises, as well as to prevent the introduction of new infections to susceptible small ruminants and camelids. We have outlined these recommendations based on the three key principles of biosecurity: **isolation**, **traffic control** and **sanitation**. Recommended actions for **Green/Normal Biosecurity Operations**, **Yellow Alert/ Enhanced Biosecurity** conditions and **Red Alert/ Emergency** conditions are provided (see Section 3 for definitions). There are many different types of individuals who may visit the farm (Figure 2), ensure they are aware of and practice the appropriate level of biosecurity operations.



Source: Verified Beef Production Plus Program

## Green/Normal Biosecurity Operations

When working under **Green/Normal Biosecurity Operations**, producers should consistently follow biosecurity procedures found in their on-farm food safety program.

1. Standard biosecurity, sanitation and communication protocols are in effect (industry standards).
2. Passive surveillance for disease conditions (observation and testing where appropriate) is in place.
3. ALL suspicious cases are to be investigated IMMEDIATELY to ensure any outbreak of disease is detected early.
4. Maintain good production, health records, and visitor logs.

In the event of a confirmed infectious disease outbreak of a reportable disease nature, the CFIA will impose isolation, traffic control, and sanitation protocols appropriate for your situation. Prior to confirmation of an infection, follow these guidelines. Your veterinarian can help you incorporate them into a biosecurity plan specific to your operation.

Further information on the Sheep and Goat Operations Biosecurity Principles may be reviewed on the CFIA website: [Sheep Biosecurity](#) [Goat Biosecurity](#).



## Yellow Alert/Enhanced Biosecurity

Prior to confirmation of an infection, follow these guidelines. Your veterinarian can help you incorporate them into a biosecurity plan specific to your operation. In the event of a confirmed FAD outbreak, the CFIA will impose isolation, traffic control and sanitation protocols appropriate for your situation.

A. **Isolation** - refers to the confinement of animals within a controlled environment that excludes vectors of disease. A barn keeps your animals in and keeps other animals out. **Mechanical transmission of virus by anything that can walk, crawl, or fly from farm to farm should be presumed.**

1. Shower and change your clothes before entering the facilities.
2. Keep a pair of boots in each barn that are worn ONLY in that barn. Every time you enter, put the boots on. Leave them in the barn every time you exit. Clean and disinfect the boots between animal lots.
3. Clean out vegetation around barns and pens to remove shelter and food for rodents that could be possible carriers.
4. Institute a vector control program for insect, bird, and mammalian (rodents) vectors. These vectors are important because they can mechanically carry infected feces from one barn, pen, or premises to another.
5. Limit sources of food and water for wildlife. Clean up spills when they happen.

6. It is essential that you advise your employees to avoid direct care of their own small ruminants and camelids and have someone else provide care during an outbreak. Also advise employees NOT to visit other small ruminant and camelid premises when they might also have contact with your herd.
7. Avoid dead wild animals. Any found on your premises MUST be treated as though they are highly infectious. Handle them with gloves, place them in a plastic bag, seal it and dispose properly, as directed by CFIA or disease control authority.

B. **Traffic Control** - includes the traffic onto your farm, the traffic patterns within the farm and leaving your farm.

1. The spread of diseases follows movement of people and traffic.
2. Be a good neighbor. If you suspect a disease of importance, initiate a self-imposed quarantine.
3. Keep **logbooks** of visitors to your facilities. Visitation logs can provide useful information for tracing a disease outbreak.
4. Keep human farm-to-farm traffic to a minimum. Conduct business by phone when possible.
5. Find out where someone has been before inviting them onto your premises, including contact with other small ruminants and camelids. Inspect visitors for evidence of cleanliness and contact with other animals.

6. Make NO UNNECESSARY VISITS to other farms.
  7. DO NOT let truck drivers, repairmen, or delivery personnel step out onto your facility without clean or new protective foot covering and clean coveralls. **It is best to provide plastic boots and coveralls for this purpose.** Contaminated shoes and clothes are an excellent vehicle for the transmission of many pathogens.
  8. If your company has several farms, establish zones to PREVENT one person from traveling to ALL farms.
  9. Require employees and crews to wear freshly laundered clothing or clothing supplied at the farm each day. DO NOT ALLOW people employed at other small ruminant or camelid operations on your premises.
  10. Infected carcasses can be a significant source of pathogens. Dispose of dead animals **as soon as possible**, according to Provincial Environment guidelines and regulations or as directed by the CFIA or disease control authority.
- C. **Sanitation** - addresses the disinfection of materials, people and equipment entering the farm and the cleanliness of the personnel on the farm. Either consult your veterinarian or refer to the list on pages 7-17 and 7-18 to select the best product for your usage needs.

**Organic material greatly increases the resistance of viruses to disinfection.**

The specifics of cleaning and disinfecting any facility will depend on many factors that differ among farms. It is not possible to address each individual concern. However, these are some guidelines that generally address cleaning and disinfection and some facts that should be considered when developing a

strategy for barn cleaning and disinfection. **In all situations, it is essential that your veterinarian be consulted to help develop and implement any plans.**

1. Organic material **MUST** be removed before disinfection can be effective.
2. Most viruses can also be inactivated by heat, such as that produced during composting. There are examples of heating barns to 90°F or higher to inactivate viruses.
3. Prevent the spread of viruses on equipment. Make sure that service personnel vehicles are **NOT CONTAMINATED** with bedding or feces. Wash and disinfect the tires and wheel wells of all vehicles coming onto your premises. Alternatively, vehicles can be parked outside the farm perimeter. Service personnel can then don plastic booties and walk on to the farm. Upon leaving, the booties can be tossed in a receptacle provided at the farm exit.
4. Wash and disinfect manure clean-out equipment taken from farm to farm.
5. Enclose **ALL** dead animal tissue to be taken to the laboratory in plastic bags. Disinfect any vehicles returning from the laboratory including the floor mats. **DO NOT** let personnel who have been to the laboratory return to your facility without a shower and a change of clothes.
6. **DO NOT** allow vehicles in areas grossly contaminated with manure.
7. Virus can be transmitted at processing plants. Equipment **MUST** be cleaned and disinfected at these facilities to prevent the spread of virus to producers when returning from processing plants.
8. In the event of a confirmed FAD infection, manure handling and disposal will be under control of the CFIA.

## **Disinfectants**

It is very difficult to inactivate viruses if they are in organic material, such as feces, bedding, or feed.

Common disinfectants:

<b>Active ingredient</b>	<b>Concentration</b>	<b>Contact time</b>
Oxidizing agents: Peroxygen (i.e. Virkon)	1 %	10 minutes
Oxidizing agents: Sodium Hypochlorite (i.e., bleach)	10,000 ppm (1 %)	10 minutes
Synthetic phenols: Ortho phenylphenol (i.e., One-Stroke Environ, LpH Ag)	1200 ppm	10 minutes
Alcohols	70 % ethanol	10 minutes

Disinfectants and other methods that will kill virus:

1. VIROCID
2. Virkon S
3. One-Stroke Environ
4. Formaldehyde
5. Bleach
6. Ammonia
7. Acids (i.e., Vinegar)
8. Heating to 90°F for 3 hours, 100°F for 30 min.
9. Drying
10. Iodine containing solutions

11. Almost any detergent will inactivate virus **if the contact time is long enough.**  
Consult manufacturer=s recommendations.

### **Equipment to Use in this and Other Biosecurity Programs**

1. Portable high-pressure sprayers can be purchased from hardware stores. These sprayers are useful in washing and disinfecting equipment and barns.
2. Hand-held sprayers can be purchased from hardware stores. These items are helpful for spraying disinfectants on the floor mats of cars, disinfecting wheel wells, etc. In addition, the same type of sprayer can be used to distribute insecticides in a vector control program.
3. Disposable coveralls, boots, and caps can be purchased from several places. These items are useful to provide for visitors.
4. Other materials important in a biosecurity program including signs, gates, pylons, and other indications of barriers can be purchased for minimal cost.

### **Red Alert/Emergency**

In the event of a confirmed FAD outbreak, the CFIA will impose isolation, traffic control and sanitation protocols appropriate for your situation.

## Technical Service Personnel

Communication, preparation, and planning steps **are critical to effective biosecurity measures** when visiting farms. Technical service personnel are encouraged to call producers in advance to book the farm visit.

Technical service personnel are defined as veterinarians, government extension staff, salesmen, shearers, repair/maintenance and other service personnel to the farm.

The measures outlined below are **Yellow Alert/Enhanced Biosecurity** measures that should be taken in the case of a suspected disease outbreak and should not preclude or replace normal biosecurity measures (i.e. On-Farm Food Safety plan).

### 1. Prepare Vehicle

#### Vehicle Equipment

- a) Divide the vehicle into CLEAN (such as passenger area, interior of clean equipment box) and DIRTY compartments (such as trunk of car/truck bed, dirty equipment box). **Never enter the clean compartment with soiled footwear and/or soiled clothing.**
- b) Rubber (washable) floor mats should be placed for each person in the vehicle.
- c) Use a rubber or heavy plastic liner to cover the whole trunk or truck box. Remove it for cleaning and disinfection.
- d) Place large plastic containers on the liner as equipment carriers. Designate as CLEAN or DIRTY.

- e) Fill a pump-up sprayer with appropriate disinfectant solution (such as a quaternary ammonia or phenol for tires and footwear).

### **Personal Biosecurity Kit**

- a) Disposable boots of heavy plastic (**at least 3 mil**) or rubber boots that can be disinfected.
- b) Washable coveralls that can be easily cleaned and disinfected and/or disposable coveralls (reinforced paper).
- c) Disposable head coverings, dusk masks, disposable gloves.
- d) Polyethylene bags to store used coveralls and contaminated articles.
- e) Hand disinfectant and cleaner, paper towels.
- f) A smaller spray or squeeze container filled with disinfectant solution is useful for cleaning small equipment.
- g) Winter parkas should generally NOT be used over coveralls at any time around barn areas. Use warm, non-bulky layers under coveralls.

### **Equipment Kit**

- a) Load required testing equipment in a plastic, non-permeable toolbox that can be easily cleaned and disinfected. **Use separate compartment or a separate box for soiled tools.**
- b) Samples for submission should be SEALED in plastic bags.



- c) Use a plastic clipboard or folder (cleanable) for records.

## **2. Know Your Clients Biosecurity Expectations and Respect Them**

- Current biosecurity procedures (could include company clothing requirement, and no previous small ruminant or camelid visits 24 hr.)
- Who should be present for the farm visit.
- History of disease and of current problem if any.
- If possible, visit youngest to oldest, healthiest to sickest.
- Keep a personal daily log of ALL visits for possible trace-back purposes.

## Farm Entry Procedures

### 1. Entering Laneway

- a. Drive slowly (**less than 15 km/hr**) to avoid tires throwing debris into wheel-wells.
- b. Avoid large puddles, heavy mud, and obvious manure whenever possible. Inform the owner if these problems are present.
- c. Park a MINIMUM of 100 feet from the barn, in a designated area if present, away from heavy traffic areas and ventilation exhausts.
- d. **Yellow Alert/Enhanced Biosecurity**: park a MINIMUM of 200 feet from the barn.
- e. **Yellow Alert/Enhanced Biosecurity**: spray tires and undercarriage with disinfectant at road PRIOR to entering laneway.
- f. Keep vehicle windows CLOSED to prevent insects from entering.

### 2. Preparing to Enter Barn

- a. Put on CLEAN coveralls, disposable boots, (hairnet and mask also recommended) beside the vehicle. If ball caps are worn, there MUST be a clean one for each barn. A supply of CLEAN coveralls, etc. is kept in the CLEAN part of the vehicle.
- b. The use of double plastic boots is RECOMMENDED if spending longer time in barn.
- c. Take ONLY the required equipment and recording necessities into barn using cleanable toolbox.

- d. Inform producer of arrival.
- e. Sign and date the logbook.
- f. **Yellow Alert/Enhanced Biosecurity**: disposable gloves, hairnet and mask are ALL required. A second pair of disposable boots is put on just prior to entering the barn. **If suspicious history, a second pair of disposable coveralls is put on prior to entering barn.**

## Farm Exit Procedures

1. Wash hands well, if facilities exist, PRIOR to exiting barn.
2. Dispose of gloves, hairnet, mask, second pair outer boots/ outer coveralls (if worn) at barn door.
3. Return to vehicle area.
4. Disinfect exterior of test kits, equipment and clipboard with spray disinfectant and wipe with paper towel (and hands if not already washed). Pump hand wash units should be considered as part of the biosecurity kit.
5. If equipment is satisfactorily cleaned, it can be returned to the CLEAN area of the vehicle. If not, it is placed in designated plastic carriers in the DIRTY compartment.
6. Test samples (vials, box pads, tissue samples) are potentially contaminated and MUST be properly packaged in clean outer plastic bags and stored/carried in the DIRTY compartment.

7. Remove and dispose of plastic boots. If possible, leave ALL disposable contaminated materials at the farm. Otherwise, seal them in a clean plastic bag and store in the DIRTY compartment.
8. Remove soiled coveralls WITHOUT contaminating street clothing, and seal in a heavy-duty polyethylene bag or plastic carrier in the DIRTY compartment.
9. If in **Yellow Alert/Enhanced Biosecurity**, using spray canister, disinfect wheels, wheel wells and street footwear. Clean and disinfect outside of canister before returning to DIRTY area.
10. Clean and disinfect hands using hand wash sanitizer **before** entering vehicle. Do NOT cross contaminate by handling DIRTY material again.
11. Depart premises. In most cases, driving for **5 km at minimum 40 km/hr** produces enough heat in the tires from friction to inactivate most pathogens.
12. If you visit a suspect farm for economically significant disease, wash vehicle, shower and wait over night **before** visiting the next farm. In case of serious or exotic diseases, a waiting period of at least 72 hours **MUST** be imposed before having further contact with live small ruminant or camelids or such premises.

## **Return to Base and Sample Submission**

1. Submit ALL samples to the lab **as soon as possible**. Leave inside the clean outer plastic bags. **Do NOT reopen**.
2. Fill out the entire submission form with identification of farm, sample, full history, and tests requested. Sanitize hands and footwear **prior** to returning to vehicle from lab.

3. Empty DIRTY compartment completely at least once daily. **Immediately dispose of ALL garbage**, preferably in exterior container. Carry DIRTY laundry inside in the closed plastic bag or container.
4. Thoroughly clean and sanitize ALL equipment used, DIRTY carry containers inside and out, and plastic base they sit on prior to returning them to vehicle.
5. Laundry facilities should allow easy sanitization and have separate area for receiving DIRTY laundry, **(handle as contaminated product)**, followed by area for washer, area for dryer (CLEAN) and separate clean storage area.
6. For washing biosecurity garments, hot water, strong detergent, bleach, and high dryer temperatures are recommended.

## Vehicle Washing

1. Vehicle **MUST** be completely washed including interior cleaning, **once weekly as a minimum**.
2. Exterior of vehicle should be washed **daily** if farm visits are done.
3. For routine vehicle washing, a commercial carwash is acceptable (drive through or pressure wand). Hose washing with pails/brushes at home in an area with NO small ruminant or camelid activity is also acceptable.
4. If in a **Yellow Alert/Enhanced Biosecurity** scenario, the vehicle exterior **MUST** be washed **between each farm visit**. The interior **MUST** be cleaned **daily**. If using a pressure washer, wear coveralls/ boots during cleaning and remove/sanitize them before entering vehicle.

5. **Sequence is important** - go from top to bottom, outside to inside.
6. Half-ton truck cargo area should be considered vehicle exterior.

#### ***EXTERIOR (at least weekly or daily as required)***

1. Use water **at pressure** (ideally from a pressure washer) to rinse the exterior of vehicle, including wheel wells, wheels and exposed chassis, to remove ALL visible organic material.
2. Wash ALL areas with detergent suitable for vehicles, **ideally using hot water** (60-77°C, 140-171°F) and pressure application if available (400-500 psi).
3. Using water **at pressure** rinse ALL external areas (can be cold water). Inspect to be sure NO organic material/debris remains.
4. In **Yellow Alert/Enhanced Biosecurity**, disinfect ALL vehicle surface areas with appropriate approved disinfectant (such as quaternary ammonia or phenol) using hand sprayer or proportion sprayer.

#### ***INTERIOR (at least weekly or daily in alert situation)***

1. Remove and dispose of ALL garbage. Remove loose objects and clean/sanitize containers before returning them to the cleaned vehicle. Clean/sanitize DIRTY containers inside and out.
2. Remove, wash, and sanitize floor mats and trunk liner.

3. Vacuum interior of vehicle including seats, floors, and trunk.
4. Clean panels, windows, steering wheel, floor pedals with detergent and disinfectant.
5. **Inspect entire vehicle and associated objects** for adequate cleaning. Re-clean any deficient areas.
6. Return containers, mats etc. to their appropriate spots.
7. In **Yellow Alert/Enhanced Biosecurity** situation: Mist interior of vehicle with Lysol Spray.
8. Clean up cleaning area. **Disinfect footwear and hands before entering the vehicle.**

### *Suitable Disinfectants/Sanitizers*

Some of the more common ones are identified below. There are many more. **Note: If there is a degreaser in the formula, the product may be hard on vehicle paint.**

- **Quaternary Ammonia (QUAT)**

dilution 1:128 (1oz/gal) to 2:128 (2 oz/ gal)

Trade names: Ascend, Swish Food Service 1000 or 2000, Coverage 256, Enviro-Solutions

*General purpose neutral disinfectant.*

- **Phenols**

dilution 1:128 (1oz/gal) to 2:128 (2 oz/ gal)

Trade names: One-Stroke Environ, LpH Ag

- **Hand Disinfectants**

Trade names: Cida-Rinse, Bacti-stat, Purell hand sanitizer.

**Note: Virkon is very effective as a sanitizer, but very corrosive and hard on all metal surfaces.**

- **Steam** (for Influenza)

### Specific Measures for Yellow Alert/Enhanced Biosecurity

1. Spray tires and undercarriage with disinfectant at the road **prior** to entering laneway.
2. Park MINIMUM of 200 feet from barn.
3. Disposable gloves, hairnet and mask are ALL required. A second pair of disposable boots is put on just **prior** to entering the barn. A second pair of disposable coveralls is put on **prior** to entering barn.
4. At the farm entrance **before exiting**, use a sprayer to disinfect wheels, wheel wells and street footwear. Clean and disinfect the outside of sprayer before returning it to the DIRTY area.



5. The vehicle exterior **MUST** be washed **between each farm visit**. The interior **MUST** be cleaned **daily**. If using pressure washer, wear coveralls/boots during cleaning and remove/ sanitize them before entering vehicle. In case of serious or exotic diseases, a waiting period of **at least 72 hours**, indoors in the wintertime, may be imposed before having further contact with live small ruminants or camelids and their premises.
6. Disinfect ALL vehicle surface areas with approved disinfectant (quaternary ammonia or phenol) using a hand sprayer or proportion sprayer.
7. Mist interior of vehicle with Lysol Spray or approved product.

### **Specific Measures for Red Alert/Emergency**

**As a minimum, all the above procedures apply.** In the event of a confirmed FAD outbreak, the CFIA will impose additional biosecurity, traffic control and sanitation protocols appropriate for the situation.

## Feed Companies and Transporters

### Preparation Procedures

#### *Personal Preparation*

#### Green/Normal Biosecurity Operations

Recommended procedures in the normal course of business, under normal conditions are as follows:

1. Follow company's **standard procedures** for personal preparation.
2. The company employing the driver is responsible for ensuring that the employee has been **fully trained** in biosecurity procedures.
3. **Monthly reviews** of biosecurity procedures should be practiced.
4. Shower and change clothes at home on a **daily** basis.
5. Travel from **youngest animals to oldest** and healthy to sick animals.
6. During winter months wear layers of non-bulky clothing under coveralls.

#### Yellow Alert/Enhanced Biosecurity

1. **Identical to Red Alert/Emergency procedures below.**

## Red Alert/Emergency

1. Change clothes and footwear at work and place in a sealed container (separate DIRTY/CLEAN containers). Wash work clothing at work or wash separately from everyday clothing.
2. Leave footwear AT WORK and spray the entire footwear with disinfectant at the end of a shift.
3. **Shower at the end of the shift.** Prevent the travel of disease by changing into **clean clothes and shoes** before entering personal vehicle.
4. Clothing and/or any other materials that are used inside the barn MUST NOT be worn/used outside the barn during and/or after the visit.
5. Be aware of the animal health status on farms.
6. Check with dispatch for routing instructions. Be aware of **Red Alert/Emergency** and **Yellow Alert/Enhanced Biosecurity** zones.
7. **Do NOT travel from a Red Alert/Emergency zone to any other area without full cleaning and disinfection.**

## *Vehicle Preparation*

### Green/Normal Biosecurity Operations

Recommended procedures in the normal course of business, under normal conditions are as follows:

1. Large washable (rubber/plastic) containers designated as CLEAN or DIRTY for storing the appropriate equipment and clothing between barn visits.
2. Keep an **information log** of **ALL daily truck activity** (company vehicle and contract carriers) for possible trace-back purposes.

### Yellow Alert/Enhanced Biosecurity

1. See **Red Alert/Emergency** procedures below.

### Red Alert/Emergency

1. Keep CLEAN areas and items separate from DIRTY areas and items. Designate a CLEAN (i.e., passenger area) and DIRTY (i.e., truck bed, equipment box, etc.) area of the vehicle and use those areas accordingly. NEVER enter any clean area with soiled footwear and/or soiled clothing.
2. Washable (rubber) or disposable floor mats for EACH person in the vehicle.

3. Pump up sprayer FULL of disinfectant solution (quaternary ammonia or phenol) for tires and footwear.
4. Hand disinfectant and cleaner, paper towels and Lysol or approved disinfectant in the truck cab.
5. Personal biosecurity kit should be **restocked daily** and stored in designated CLEAN area of vehicle.
6. Keep an information log of **ALL daily truck activity** (company vehicle and contract carriers) for possible trace-back purposes.

### *Personal Biosecurity Kit*

#### *Yellow Alert/Enhanced Biosecurity*

1. Footwear that can be sanitized. If using disposable boots, should be **at least 3 mm** thick plastic.
2. If the barn MUST be entered, WASHABLE coveralls that can be easily cleaned and disinfected and/or DISPOSABLE coveralls (reinforced paper).
3. DISPOSABLE head coverings, dusk masks, disposable gloves (or several pairs of CLEAN work gloves for the day).
4. Polyethylene bags to store used coveralls, gloves, and other contaminated articles.
5. A small spray or squeeze container filled with disinfectant solution is useful for cleaning small areas (i.e., floor mats).

6. Plastic clipboard or folder (MUST be cleanable) for records (information log).  
This MUST be **cleaned on a daily basis** at the end of every shift.

### Red Alert/Emergency

1. Use disposable boots of **at least 3 mil** thickness.
2. If the barn MUST be entered, use disposable coveralls (reinforced paper).
3. Use DISPOSABLE head coverings, dusk masks, and disposable gloves.
4. Polyethylene bags to store used coveralls, gloves, and other contaminated articles.
5. A small spray or squeeze container filled with disinfectant solution is useful for cleaning small areas (i.e., floor mats).
6. Plastic clipboard or folder (MUST be cleanable) for records (information log).  
This MUST be **cleaned after each use**.

### Customer Biosecurity Requirements

#### Applies to all Biosecurity Zones

1. **Know the customer's biosecurity requirements and respect them.** This applies to ALL disease outbreak zonesCRed Alert/Emergency, Yellow Alert/Enhanced Biosecurity and Green/Normal Biosecurity Operations.

2. **Current biosecurity procedures** (could include shower in, company clothing requirement, no previous small ruminant or camelid visits 24 hours, etc.
3. Farm/manager owner has the **right to inspect** ALL vehicles, equipment, footwear, and clothing.
4. Clothing and/or any other materials that are used inside the barn **MUST NOT be worn/used outside the barn** during and/or after the visit.

## Farm Entry Procedures

### Green/Normal Biosecurity Operations

1. Follow ANY procedures required by the customer.
2. Drive **slowly (less than 15 km/hr)** to avoid tires throwing debris into wheel-well.
3. Avoid large puddles, heavy mud, and obvious manure whenever possible.  
Unsuitable driving conditions should be **reported immediately** to dispatch or office.

### Yellow Alert/Enhanced Biosecurity

1. Safely pull off highway into laneway or designated area and STOP.
2. IMMEDIATELY upon exiting the truck, ALL personnel are to put on  
SANITIZE-ABLE or DISPOSABLE boots and clean gloves (if using gloves).

3. Ensure DISPOSABLE or clean SANITIZE-ABLE floor mat is in place in cab of truck.
4. Disinfect tires and undercarriage of vehicle.
5. Follow **any additional procedures required by the customer.**
6. Re-enter cab and drive **slowly (less than 15 km/hr)** to avoid tires throwing debris into wheel-well.
7. Avoid large puddles, heavy mud, and obvious manure whenever possible. Unsuitable driving conditions should be **reported immediately** to dispatch or office.
8. Keep vehicle windows and doors CLOSED while on farm property to prevent insects from entering.
9. Feed pipes MUST be disinfected before placing in storage compartment.
10. Feed truck drivers should NOT **enter the feed box** of the truck without permission from their supervisor.
11. Feed truck drivers are NOT **to enter any barn or building attached to the barn.** Transporters and/or other personnel MUST follow procedures outlined before entering the barn.

### Red Alert/Emergency

1. Safely pull off highway into laneway or designated area and STOP.



2. IMMEDIATELY upon exiting the truck, ALL personnel are to put on CLEAN coveralls, sanitize-able or disposable boots and clean gloves (if using gloves).
3. Ensure DISPOSABLE or CLEAN sanitize-able floor mat is in place in cab of truck.
4. Disinfect tires and undercarriage of vehicle.
5. Follow **any additional procedures required by the CFIA and/or the customer.**
6. Re-enter cab and drive **slowly (less than 15 km/hr)** to avoid tires throwing debris into wheel-well.
7. Avoid large puddles, heavy mud, and obvious manure whenever possible. Unsuitable driving conditions should be **reported immediately** to dispatch or office.
8. Keep vehicle windows and doors CLOSED while on farm property to prevent insects from entering.
9. Feed pipes CANNOT be dragged between bins on farm. Feed pipes MUST be disinfected before placing in storage compartment.
10. Feed truck drivers are NOT **allowed to enter the feed box** of the truck while in the **Red Alert/Emergency** zone.
11. Feed truck drivers are **NOT to enter any barn or building attached to the barn** for any reason.
12. It is unlikely that transporters will be allowed to enter the **Red Alert/Emergency** zone.

13. Follow any additional specific procedures, licensing, disinfection and sealing of trucks required by the CFIA.

## Barn Entry Procedures

### Green/Normal Biosecurity Operations

1. Put on CLEAN coveralls, DISPOSABLE boots (or easily sanitized boots which can be sanitized prior to barn entry), and hairnet **at the doorway to the barn**.
2. Try to **minimize the tracking in and out of the barn**.
3. **Disinfect hands** and **walk to door** leading into the barn area.
4. Follow **any additional procedures as required by the customer**.

### Yellow Alert/Enhanced Biosecurity

1. Put on CLEAN DISPOSABLE coveralls, disposable gloves, disposable boots, mask, and hairnet **beside the vehicle**.
2. **Carry** a pair of DISPOSABLE boots to be **worn into the barn**.
3. **Disinfect hands** and **walk to door** leading into the barn area.
4. Put on **the second pair of boots** and **enter barn**.
5. Disposables should be **disposed of on-farm**.

## Red Alert/Emergency

1. **Do NOT enter Red Alert/Emergency zone.** Use other means of communication such as the telephone to reach farmers in the Red Alert/Emergency zone.

## Barn Exit Procedures

### Green/Normal Biosecurity Operations

1. Sign the visitor **logbook** and fill out any necessary paperwork.
2. **Wash or disinfect hands before exiting the barn.** Shower if possible.
3. Remove and DISPOSE of disposable items **at barn door**.
4. Return to vehicle; sanitize any equipment with disinfectant.
5. CLEAN and sanitize footwear **before** entering vehicle.
6. Remove washable coveralls **without contaminating** street clothing and **seal** in plastic bag and keep in DIRTY section of vehicle.
7. **Clean and disinfect hands before entering vehicle.**

## Yellow Alert/Enhanced Biosecurity

1. Sign the visitor **logbook** and fill out any necessary paperwork.
2. **Wash or disinfect hands before exiting the barn.** Shower if possible.
3. Upon exit, remove the second pair of boots **at barn door**, hairnet, mask, and DISPOSE of them.
4. Return to vehicle; sanitize any equipment with a disinfectant.
5. Remove and DISPOSE of first pair of boots.
6. Remove coveralls **without contaminating** street clothing and DISPOSE of **on the farm**.
7. **Clean and disinfect hands before entering vehicle.**

## Red Alert/Emergency

**Do NOT enter Red Alert/Emergency zone.** Use other means of communication such as the telephone to reach farmers in the Red Alert/Emergency zone.

## Farm Exit Procedures

### Green/Normal Biosecurity Operations

1. Follow **any procedures required by the customer**.
2. Drive **slowly (less than 15 km/hr)** to avoid tires throwing debris into wheel-well.
3. Avoid large puddles, heavy mud, and obvious manure whenever possible.  
Unsuitable driving conditions should be **reported immediately**.

### Yellow Alert/Enhanced Biosecurity

1. Feed pipes **MUST** be disinfected before placing in storage compartment.
2. Proceed to end of laneway or designated area and **STOP**.
3. Disinfect tires and undercarriage of vehicle. Remove as much mud and manure as possible.
4. **DISPOSABLE** mat **MUST** be removed, or **SANITIZE-ABLE** mat **MUST** be disinfected and steering wheel sprayed with disinfectant.
5. Remove **DISPOSABLE** boots, gloves or disinfect **SANITIZE-ABLE** boots and hands (if no gloves worn) **before** entering cab. Place **DIRTY** materials in appropriate container and return to mill for proper disposal or sanitization **or leave on farm if possible**.

## Red Alert/Emergency

1. Feed pipes **MUST** be disinfected before placing in storage compartment.
2. Proceed to end of laneway or designated area and **STOP**.
3. Disinfect tires and undercarriage of vehicle. Remove as much mud and manure as possible. If leaving a quarantined premises, **a full wash and sanitizing supervised by CFIA will be required** before leaving the property. A **second wash may be required** before leaving the zone.
4. The cab should be inspected and any mud and/or manure in the cab should be removed.
5. **DISPOSABLE** mat **MUST** be removed or a **SANITIZE-ABLE** mat **MUST** be disinfected and the steering wheel, pedals, and handles sprayed with disinfectant.
6. Remove coveralls, gloves (if worn), and **DISPOSABLE** boots or disinfect **SANITIZE-ABLE** boots and hands (if no gloves worn) **before** entering cab. Place **DIRTY** materials in appropriate container and return to mill for proper disposal or sanitization **or leave on farm if possible**.

## Return to Base Procedures

### Yellow Alert/ Enhanced Biosecurity

Identical to Red Alert/Emergency Procedures. **See Below.**

### Red Alert/Emergency

**After** leaving the quarantined farm **prior** to returning to base the vehicle **MUST be cleaned and disinfected** at the designated cleanout area.

#### *Vehicle Washing:*

Minimum requirement is **DAILY** washing of vehicle however the minimum could be that the vehicle be washed **EVERY LOAD** if it is delivering into the quarantine area.

1. Vehicle **MUST be completely washed**, including interior, when leaving quarantine zone.
2. For vehicle washing, a commercial truck wash is acceptable (drive through or pressure wand) or a nozzled hose with pails/brushes.
3. If using a pressure washer, wear coveralls/boots during the process and **REMOVE/SANITIZE** them at completion **before** entering vehicle.
4. Half-ton truck cargo area should be considered vehicle exterior.
5. **The sequence for vehicle washing is important.** Go from top to bottom, outside to inside.

### *Exterior Washing:*

1. Use water **at pressure**, (ideally pressure washer) spray to rinse exterior of vehicle, removing all visible organic material, including wheel wells, wheels, exposed chassis.
2. Wash ALL areas with detergent suitable for vehicles **ideally using hot water** (60-77° C, 140-171°F) and pressure application if available (400-500 psi).
3. Using water **at pressure** rinse ALL external areas (can be cold water). Inspect to be sure NO organic material/debris remains.
4. Once the exterior of the truck has been washed, the truck should be **moved a minimum one truck length from where the exterior was cleaned, before the cleaning of the interior may proceed.**

### *Interior Washing:*

1. Remove and DISPOSE of ALL garbage.
  - Loose objects and containers **MUST** be removed, and exteriors cleaned and sanitized before returning to the cleaned vehicle.
  - DIRTY containers **MUST** be emptied, cleaned, and sanitized inside and out.
  - Thoroughly **CLEAN** and sanitize ALL equipment used.
  - **CLEAN** any DIRTY carry containers inside and out, as well as the base they sit on.
2. Remove, wash, and sanitize floor mats and trunk liner. **DISPOSE** of any disposables.



3. Vacuum interior of vehicle including seats, floors, and trunk.
4. CLEAN panels, windows, steering wheel, floor pedals with detergent and disinfectant.
5. INSPECT entire vehicle and associated objects for adequacy of cleaning procedure. **Re-clean any deficient areas.**
6. Return containers, mats etc. to their appropriate locations.
7. **Clean up cleaning area.**

#### *Vehicle Disinfecting:*

Minimum requirement is **DAILY** washing of vehicle however the minimum could be that the vehicle be washed **EVERY LOAD** if it is delivering into the quarantine area.

1. Complete a thorough inspection of the vehicle and ensure that NO debris remains on the exterior of the vehicle.
2. The appropriate disinfectant, for the disease, **MUST** be thoroughly applied using appropriate washing procedures i.e. top to bottom.

#### *Exterior Disinfecting:*

1. In **Red Alert/Emergency**, the exterior of the vehicle **MUST** be disinfected with approved disinfectant for the disease outbreak. Use a hand sprayer or pressure washer to apply disinfectant to ALL external areas including wheel wells, wheels, exposed chassis.

### *Interior Disinfecting:*

1. In **Red Alert/Emergency**, mist interior of vehicle with Lysol spray or other approved product.
2. **Disinfect footwear and hands before entering vehicle.**
3. **After** the truck has been CLEANED and DISINFECTED in the above manner the truck will return to base where **it will be determined** if the truck will take another load into the quarantine area or if the truck will sit idle. If the truck is NOT required to deliver into the quarantined area, it is **recommended that the truck sit idle for 72 hours** (indoors in the wintertime).

### *At Home Base*

1. Laundry facilities should be EASILY sanitized and have SEPARATE area for receiving DIRTY laundry, (handle as contaminated product); followed by area for washer, area for dryer (CLEAN) and separate CLEAN storage area.
2. Carry DIRTY laundry inside in the CLOSED plastic bag or container. For washing biosecurity garments, hot water, strong detergent, bleach and high dryer temperatures **are recommended.**

### ***Suitable Disinfectants/Sanitizers:***

Some of the more common ones are listed below. There are many more available.

**Note that if there is a degreaser in formula, the product may be hard on vehicle paint.**

#### **Quaternary Ammonia**

dilution 1:128 (1oz/gal) to 2:128 (2 oz/ gal)

*Trade names:* Ascend, Swish Food Service 1000 or 2000, Coverage 256, Enviro-Solutions General purpose neutral disinfectant.

#### **Phenols**

dilution 1:128 (1oz/gal) to 2:128 (2 oz/ gal)

*Trade names:* One-Stroke Environ, LpH Ag

#### **Hand Disinfectants**

Cida-Rinse, Bacti-stat, Purell hand sanitizer

Note that **Virkon** is very effective as sanitizer, but **very corrosive** on **ALL** metal surfaces. Use 2oz in 10L of water. (In winter substitute 40% of the water with windshield washer fluid.)

## Commingling Sites

Commingling is when livestock from one operation come into contact with another, such as in community pasture, at an auction yard, or at a livestock show. While commingling is a common practice in the livestock industries, it comes with the risk of disease transmission among livestock. Producers can use biosecurity strategies and practices, both during and following commingling, to help prevent and mitigate the risk of disease from entering and spreading to their herds.

**Share herd health and biosecurity information.** As disease risks and management practices can vary between operations, it is important to know where other animals are coming from to determine compatibility. Share health status and biosecurity practice information with herd owners of commingled animals. The information shared will allow for informed planning to manage potential risks. Herd owners should agree to communicate changes in the health status of their livestock.

**Minimize contact with other herds and species.** When animals come into contact with other herds or species there is an inherent risk of exposure to disease. Provide a buffer between adjoining herds where possible and limit the number of sources from which animals are commingled. Minimize direct contact with wildlife through use of fences, additional monitoring, and guardian dogs or animals. Avoid water sources that could be shared between livestock and wildlife.

**Segregate, vaccinate, test, and treat returning animals.** When animals return from commingling sites, they should be held separately for 14 days and monitored for disease. Any disease that may have been carried by the commingled animal should become evident during this time period. During this time period, where possible, do not use the same feed, water, bedding, or equipment as is used with the home herd. Any equipment that is used for segregated animals must be disinfected before use for other animals. Prior to introduction or re-introduction, animals should be vaccinated for diseases relevant to the herd, as well as tested and treated for disease relevant to the environment from which they came. Contact your veterinarian to develop a protocol for introducing or re-introducing livestock into the herd.

For additional information on animal additions and management of animal movement risks please refer to the CFIA [National Sheep On-Farm Biosecurity Standard](#) and [National Farm-Level Biosecurity Standard for the Goat Industry](#).

## Section 8: Humane Depopulation Protocols (Humane Euthanasia of Large Numbers of Small Ruminants or Camelids)

The goal of euthanasia is to ensure that death is painless and free from distress to the animal. The age and size of the animal should be considered when selecting a method for humane depopulation, as different methods are preferred.

Proper training and properly maintained equipment are fundamental to protect both animal welfare and human safety. Proper equipment for handling and restraint is a

### Sensibility signs:

- Rhythmic breathing
- Constricted pupils
- Righting reflex
- Vocalization
- Palpebral or corneal reflexes
- Response to painful stimulus
- Blinking
- Jaw tone

priority. Handlers should be aware of low stress animal handling. The use of existing systems such as holding rooms or load out areas to perform euthanasia away from the other animals should be incorporated. The use of sedation to facilitate euthanasia of aggressive or unmanageable animals should be considered in consultation with your veterinarian. On-farm depopulation should not be in the hands of the barn staff but conducted by a designated team of trained individuals.

After euthanasia, it is important to check for signs of insensibility.

Animals should be assessed and ranked according to euthanasia need. This decision may be based on clinical signs of disease, feed availability and other factors. Animals must not be dragged, prodded, or made to move incurring pain prior to euthanasia.

PEI has some small size provincial abattoirs. Depending on the circumstance, the abattoir(s) would be the preferred method of euthanasia. The logistical issues of transportation to the abattoir(s) would have to be organized.

## Preferred methods of euthanasia

### Penetrating Captive Bolt and Secondary Kill Step

Select the appropriate caliber, charge, and bolt length for the size of the animal. Pithing or bleeding out may be required if the bolt device is designed only to stun the animal.

## Non-penetrating Captive Bolt and Bleeding Out

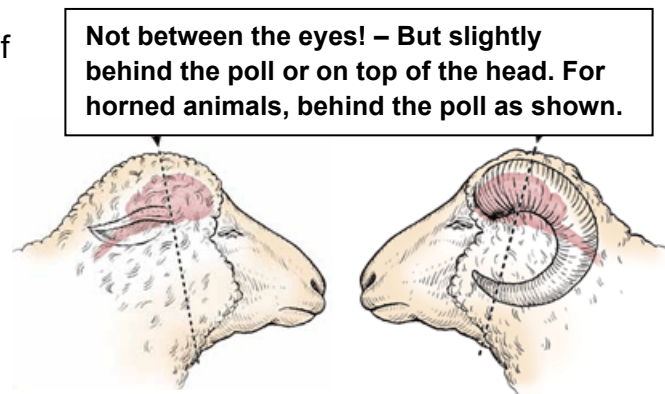
This method may only be used on young sheep and goats under 15 kg and requires bleeding out.

## Approved Euthanasia Drugs

Injection with barbiturates and other drugs administered by a licensed veterinarian is suitable for small ruminants and camelids of all sizes. Carcasses should be safely disposed of.

## Free Bullet

Free bullet is an acceptable method of on-farm euthanasia for all small ruminants and camelids. A minimum of .22 caliber firearm using “long-rifle” hollow nosed ammunition is appropriate for all animals. A .22 magnum firearm is also appropriate for horned animals.



## Blunt Force Trauma

For neonatal sheep and goats up to 5 days of age and under 9 kg, a sufficiently strong blow accurately placed can be used to euthanize the animal. Confirm the skull is crushed through palpation or visual cues. Follow with immediate bleeding out.

Image: Code of Practice for the Care and handling of Sheep, National Farm Animal Care Council. 2009.

All circumstances need to be considered when making the decision to depopulate a herd or group of animals based on availability of equipment, manpower and training, disposal and acceptability.

## References:

Euthanasia, [www.livestockwelfare.com](http://www.livestockwelfare.com) (Accessed February 7, 2018)

Shearer, J.K. & Ramirez, A. 2013. Procedures for Humane Euthanasia, Iowa State University

National Farm Animal Care Council, 2009. Code of Practice for the Care and Handling of Sheep, [www.nfacc.ca](http://www.nfacc.ca)

National Farm Animal Care Council, 2013. Code of Practice for the Care and Handling of Goats, [www.nfacc.ca](http://www.nfacc.ca)

Livestock Market Interruption Strategy. 2014. Depopulation Research and Analysis.

Livestock Market Interruption Strategy. 2015. Investigation of Humane Depopulation and Carcass Disposal Methods, and Development of Plans and Procedures for a Livestock Market Interruption Strategy.

## Section 9: Disposal Options for Deadstock and Manure

In the case of a CFIA declared **Yellow Alert/Enhanced Biosecurity** or **Red Alert/Emergency**, **CFIA will direct how to proceed with deadstock and manure disposal** from affected barns. However, it is important that every producer be aware of acceptable disposal options and have a **plan for disposal**. The options will differ depending on the number of carcasses to be disposed, the location of the farm in the province, and whether there is a confirmed presence of an infectious disease.

### Disposal Options - Confirmed Infectious Disease

CFIA will assess the situation and decide the appropriate action. Small ruminants and camelids, carcasses, or associated products may be disposed of by burial or incineration. Sites selected for burial should have minimal potential for small ruminant and camelid access and must be authorized and approved by the DCLE. The DCLE must approve the operation of an incinerator.

Removal of any infected small ruminants or camelids, carcasses, or associated products from a premises **should be avoided**; however, if required must be done so under license by CFIA. Trucks removing small ruminants or camelids, carcasses, or associated products must be leak-proof, covered, and follow a licensed route. Trucks **MUST** be cleaned and disinfected in a manner that would **prevent the spread of disease**.

### Disposal Options - Without Infectious Disease (Uninfected animals destroyed in a control zone or mass mortalities from a fire, etc.)

Small ruminants or camelids, carcasses, or associated products without infectious disease may be disposed of without restrictions. The DEECA must approve and

authorize any sites used for burial. Approval from the DEECA **is required** to operate an incinerator.

### **Manure and Bedding Disposal from FAD Infected Barns**

In the event of a confirmed FAD, manure handling will be under the control of the CFIA. Manure and bedding may be ordered buried or burned, or composted away from livestock buildings, sprayed with disinfectant, and covered with heavy impervious plastic. Once manure and bedding has been composted for the specified time period it may be disposed of under strict CFIA handling and disposal precautions.

### **Manure and Bedding Disposal from Non-infected Barns**

Manure and bedding may be disposed of using normal practices.



## Section 10: Cleaning and Disinfecting Protocols for an Infected Premises

The following C&D protocols are those used by CFIA in a FAD outbreak and are included here for information purposes. **During any outbreak of FAD, all C&D procedures will be under the direction of CFIA.**

Cleaning and disinfection activities on infected premises will **be limited to areas inhabited or exposed to small ruminants and camelids**. Veterinary inspectors assigned to each infected premises will determine whether materials can be effectively **cleaned and disinfected or should be discarded**. In the case of a federally reportable disease as listed in the *Reportable Diseases Regulations*<sup>8</sup> under section 2(2) of the Canadian *Health of Animals Act*<sup>9</sup>, cleaning and disinfection will be carried out according to CFIA requirements and internationally accepted standards.

### Cleaning and Disinfection of Barns

1. ALL infected premises will be visited **a minimum of three times** by a veterinary inspector (C&D Protocol for Depopulated Premises).
2. The first inspection, the **Site Evaluation**, will involve an assessment of the property indicating any **potential problem areas**. The **cleaning and disinfection protocol** will be reviewed with the owner/manager of the premises. **Water and power supplies** will be identified. The owner/ manager will be provided instructions as to **personal safety** and **biosecurity**.

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<sup>8</sup> *Reportable Diseases Regulations* <http://laws-lois.justice.gc.ca/eng/regulations/SOR-91-2/>

<sup>9</sup> *Health of Animals Act* <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>

3. An **action plan** is to be developed for the infected premises and the **extent** to which C&D should be carried out.
4. The **methods** of cleaning, the **vector control** program, the **detergent**, the **disinfectant**, the **contractor** performing the cleaning and disinfection, and an **estimated completion date** will be identified.
5. The second inspection, the **Clean Inspection**, will involve a thorough **walk-through** of the infected premises to ensure that ALL **organic material has been removed**. If the cleaning process is NOT approved during this visit, then **another visit** will be required **before** disinfection is allowed to proceed.
6. The third inspection, the **Disinfection Inspection**, will involve the **observation** of the disinfection process. The **disinfectant** will be **identified** and **monitored** to ensure that the proper dilution rate is used.
7. The cleaning and disinfection of an infected premises is approved ONLY once the veterinary inspector is satisfied that ALL **requirements** of the C&D protocol and the **Cleaning and Disinfection Checklist** have been met.

## Equipment on Infected Premises

1. Equipment on infected premises will be identified. The C&D procedure of equipment will be reviewed with the owner/manager. Storage areas will be **inspected** and the extent to which C&D should be taken will be discussed with the owner/manager.
2. Movements are **licensed** and anything or anyone coming on to, or going off an infected premises MUST be subjected to thorough C&D.

## Biosecurity

1. **Biosecurity of the infected premises is vital throughout the C&D process.**
2. Biosecurity protocol will be followed as set out by CFIA.
  - Cleaning and disinfection are the **financial responsibility of the owner** and are labour intensive and time consuming.
  - The highest standards **MUST** be maintained at all times.
  - If the owner requires manpower to assist in the C&D of his/her premises, the appropriate industry representative (SRCERAT member) **should be contacted.**

## Cleaning and Disinfection Checklist

### Step 1: Dry Cleaning

Removal of ALL **organic matter is essential**, as manure, bedding and feathers may contain high levels of contamination and are major sources of infection.

- Ensure that decontamination facilities for vehicles and personnel are set up. Biosecurity procedures **MUST** be followed at all times.
- Empty feeders and bins
- Shut down ventilation fans
- Close all windows, etc.
- Remove ALL mobile equipment, e.g. feeders, drinkers, pen dividers, etc.
- Clean and dust the ceiling, walls, and fixed equipment, including fans, fan hoods and inlets.
- Remove manure and bedding. Scrape and sweep the floor. Remove the top 3 cm of dirty soil if applicable.
- Rodent and insect control programs **MUST** be in place.

### Step 2: Water System Disinfection

ALL water systems, tanks, pipes, drinkers, and trays **may contain contaminants**.

- Clean ALL watering systems. Flush water lines.
- Put the disinfecting solution **through the medicator** to get the recommended dose.

- Make sure ALL your disinfectant has reached the end of the water line by letting the water run through until you can see or smell the disinfectant. **Please note that molds and debris may be released during the disinfection process.**
- Leave the solution in the drinking water system for **at least 10 minutes** before draining.
- Fill water lines with fresh water.

### **Step 3:      Cleaning of Facilities and Equipment**

Cleaning with the use of a detergent/degreaser helps to remove organic material and biofilm. ALL units and equipment which are physically or functionally connected to the premises **MUST** be thoroughly cleaned and disinfected.

- Begin the cleaning process by **thoroughly wetting** the ceiling, walls and fixed equipment finishing with the floor. A low-pressure sprayer could be used with detergents. Foaming agents work well.
- Soak heavily soiled areas for **at least 20 minutes** and use a brush if necessary.
- Rinse with a high-pressure washer.
- Clean entries, walkways, and ALL other adjoining rooms.
- Clean around the barn: the entries, walkways, exhaust fans, doors, loading docks, etc.
- Allow surfaces to dry. Auxiliary heat may be necessary. Heating the barn will also help bring out any beetles.
- Feed tanks **MUST** be cleaned and fogged with the approved disinfectant.

- Treat the facility for beetles. Afterwards, sweep up and dispose of them appropriately.

#### **Step 4: Mobile Equipment and Vehicle Cleaning**

Mobile equipment (feeders, drinkers, etc.), vehicles and storage areas **may be highly contaminated** and will require cleaning. ALL vehicles areas which are physically or functionally connected to the premises must be cleaned.

- Remove ALL organic material by pressure washing with a detergent/degreaser.
- Foaming agents may be helpful for hard to clean equipment.

#### **Step 5: Clean Inspection**

- Contact CFIA for Clean Inspection

#### **Step 6: Disinfection**

**Approved disinfectants used according to label instructions are essential.**

- Make sure that ALL surfaces and equipment are as dry as possible.
- Apply disinfectant on ALL surfaces according to label instructions paying particular attention to contact times.
- Start from the apex of the roof and work down the walls to the floor.
- When finished, leave and close ALL openings.
- Allow surfaces to dry. Auxiliary heat may be necessary.
- **Fogging is recommended for inaccessible areas (corners, cracks, seams, feed tanks, attics).**

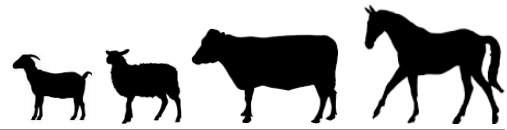
#### **Step 7: Final Inspection**

- Contact CFIA for final inspection and approval

## ***Section 11: Appendices***

### **Appendix I Small Ruminant and Camelid Diseases of Interest**

#### **Reportable Diseases and Diseases of Economic Importance**



## Anthrax

### What is anthrax?

Anthrax is a disease caused by a bacteria that occurs naturally in the environment. <sup>(1)</sup>Cattle, horses, sheep, goats, and bison are particularly susceptible.

### What are the clinical signs of anthrax?

<sup>(1)</sup>In highly susceptible species like cattle, the first sign of an anthrax outbreak is often sudden death. <sup>(2)</sup>In animals that do not die suddenly, clinical signs can include difficulty breathing, decreased eating and drinking, decreased milk production, swelling around the jaw and lower abdominal areas, fever, and a distressed appearance. After death, animals bloat quickly and may leak bloody fluids from their body openings (mouth, nose, anus, etc.).

### Are there any human health risks?

<sup>(3)</sup>Anthrax is a zoonotic disease meaning that it can be spread from animals to humans. <sup>(3)</sup>If the right precautions are taken, human infections associated with animal anthrax outbreaks are rare. There are three forms of disease humans can develop after becoming infected with anthrax: cutaneous anthrax, pulmonary anthrax, and gastrointestinal anthrax. <sup>(2)</sup>The cutaneous form is the most common and is acquired through contact of bacteria with broken skin.

### How is anthrax transmitted?

<sup>(3)</sup>The bacteria are shed by animals that have died of anthrax. Anthrax bacteria are very resistant and can survive in the environment for several years. Animals can become infected with anthrax by bacteria inhalation, ingestion, or contact with breaks in the skin. Insects may also transmit the bacteria.

### How is anthrax diagnosed and treated?

<sup>(2)</sup>Diagnosis is made by examining blood or tissue samples for bacteria. Samples must be obtained carefully to prevent excessive environmental contamination and human exposure. <sup>(2)</sup>Anthrax can be treated with antibiotics, but it should be discussed with a veterinarian first.

### Prevention and Control of anthrax

<sup>(2)</sup>Anthrax is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of anthrax must be reported to the Canadian Food Inspection Agency (CFIA) immediately, by law. <sup>(2)</sup>If anthrax is confirmed, the carcass must be destroyed, and the surrounding area cleaned and disinfected to prevent spread to other animals. The best way to prevent anthrax in livestock is by vaccination. Cleaning and disinfection of equipment and footwear that may have been in contact with contaminated soil, avoiding giving hay or feed that may have been in contact with contaminated soil, and washing clothes that may be contaminated separately, are other preventative methods that should be used along with vaccination.

### For more information

[CFIA information](#)

[OIE fact sheet](#)

### References

1. Hugh-Jones ME. Overview of Anthrax - Generalized Conditions. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/anthrax/overview-of-anthrax>. Accessed June 1, 2018.
2. Government of Canada, Canadian Food Inspection Agency, Animal Health Directorate. Anthrax – Fact Sheet. Canadian Food Inspection Agency 2013. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/anthrax/fact-sheet/eng/1375205846604/1375206913111>. Accessed June 1, 2018.
3. Anthrax. OIE - World Organisation for Animal Health. Available at: <http://www.oie.int/en/animal-health-in-the-world/animal-diseases/anthrax/>. Accessed June 1, 2018.
4. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018.





## Bluetongue (BT)

### What is Bluetongue?

Bluetongue is a viral disease that affects wild and domestic ruminants.

### What are the clinical signs of Bluetongue?

<sup>(1)</sup>Clinical presentation varies from inapparent infection in most species to acute and potentially fatal disease in sheep and some deer. Clinical signs can include fever, excessive drooling, depression, difficulty breathing, regurgitation of food, discharge from the nose and eyes, redness of the skin (on the muzzle, lips, face, eyelids, ears, tops of the hooves, etc.), as well as swelling of the head, jaw and around the eyes, and sores in the mouth. An enlarged red tongue which later becomes bluish in colour is also common. Lameness, weight loss, abnormal twisting of the neck, and abortions or malformations of fetuses can also be present in this form of the disease. <sup>(1)</sup>Acute disease can either end with death (within 8-10 days) or long recovery with hair loss, decreased reproductive ability, and delayed growth.

### Are there any human health risks?

None.

### How is Bluetongue transmitted?

<sup>(2)</sup>BT is transmitted between animals by a specific biting midge (*Culicoides* spp.) with limited distribution in Canada. <sup>(3)</sup>The presence of the virus is most common in late summer and early fall in Canada as it must be warm enough for the virus to multiply inside the midge. BT has only been identified in southern British Columbia and more recently in southern Ontario as temperatures rise enough to support northern migration of midges. Midge activity ceases after the first frost.

### How is Bluetongue diagnosed and treated?

<sup>(3)</sup>Diagnosis is made with clinical signs, midge presence, and lab confirmation. There is no treatment.

### Prevention and Control of Bluetongue

<sup>(3)</sup>Some types of BT are endemic in the U.S., and these are immediately notifiable under the Health of Animals Regulations<sup>(4)</sup>. All other types of BT are federally reportable under the Health of Animals Act<sup>(5)</sup>, meaning that all suspected and confirmed cases must be reported to the CFIA. <sup>(1)</sup>In disease-free areas, animal movement control, testing and quarantine of infected animals, and vector control can help control the spread of BT. In regions where BT is endemic, the best way to control the spread is vector control (midge control).

### For more information

[CFIA fact sheet](#)

[OIE fact sheet](#)

### References

1. Fernández Peter J., White WR. Atlas of transboundary animal diseases. Paris: World Organisation for Animal Health; 2016.
2. Lear AS, Callan RJ. Overview of Bluetongue - Generalized Conditions. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/bluetongue/overview-of-bluetongue>. Accessed May 23, 2018.
3. Government of Canada, Canadian Food Inspection Agency, Animal Health Directorate. Fact Sheet - Bluetongue. Canadian Food Inspection Agency 2015. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/bluetongue/fact-sheet/eng/1306116803992/1306121522520>. Accessed May 23, 2018.
4. Government of Canada, Legislative Services Branch. Consolidated Regulations of Canada, Health of Animals Regulations. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 29, 2018.
5. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018.



## Brucellosis

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### What is brucellosis?

Brucellosis is a contagious disease caused by several species of *Brucella* bacteria that affects many species, particularly cattle, swine, goats, sheep, horses and other ruminants.

### What are the clinical signs of brucellosis?

<sup>(1)</sup>Clinical signs of brucellosis can include abortion, stillborn or weak offspring, retention of the placenta, infertility, enlarged joints, swelling of the testicles, lameness, and decreased milk production. In horses, brucellosis can also cause draining sores on the head and neck. Infected animals can carry brucellosis for life.

### Are there any human health risks?

<sup>(2)</sup>Brucellosis is a zoonotic disease, meaning it can be spread from animals to humans. However, infection in humans is rarely a concern in Canada.

### How is brucellosis transmitted?

<sup>(2)</sup>Brucellosis can be transmitted through direct contact with tissues or fluids from an infected animal, consumption of milk or colostrum from an infected animal, and consumption of contaminated food or water.

### How is brucellosis diagnosed and treated?

<sup>(2)</sup>Brucellosis diagnosis is made based on clinical signs, bacterial culture, and laboratory testing. There are no practical treatments.

### Prevention and Control of brucellosis

<sup>(2)</sup>Brucellosis is a reportable disease under the Federal Health of Animals Act<sup>(3)</sup>, meaning that all suspected cases of brucellosis must be reported to the Canadian Food Inspection Agency (CFIA) immediately, by law, for investigation. Canada currently has a brucellosis-free status for livestock<sup>(4)</sup> and has a surveillance program in place to detect cases early (should they occur)<sup>(2)</sup>. If brucellosis is confirmed, the CFIA implements measures to control its spread.

### For more information

[CFIA fact sheet](#)

[OIE fact sheet](#)

### References

1. Nicoletti P. Overview of Brucellosis in Large Animals - Reproductive System. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/reproductive-system/brucellosis-in-large-animals/overview-of-brucellosis-in-large-animals>. Accessed June 12, 2018.
2. Government of Canada, Canadian Food Inspection Agency. Fact Sheet - Brucellosis. Canadian Food Inspection Agency 2016. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/brucellosis/fact-sheet/eng/1305673222206/1305673334337>. Accessed June 12, 2018.
3. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed June 12, 2018.
4. Brucellosis: OIE - World Organisation for Animal Health. Available at: <http://www.oie.int/en/animal-health-in-the-world/animal-diseases/brucellosis/>. Accessed June 12, 2018.



## Foot-and-Mouth-Disease (FMD)

### What is FMD?

Foot and Mouth Disease (FMD) is an extremely contagious virus affecting most cloven-footed animals, including cattle, pigs, sheep, and goats.

### What are the clinical signs of FMD?

<sup>(1)</sup>Clinical signs of FMD can include fever, depression, decreased appetite, decreased milk production, and blisters and sores on the lips, mouth, tongue, teats, udder, nostrils, muzzle/snout, and on the feet. Sores on the feet can make animals reluctant to move.

### Are there any human health risks?

<sup>(2)</sup>Human infection is rarely a concern, but mild cases have occurred. Infections typically result from consumption of infected milk or direct contact with FMD blisters.

### How is FMD transmitted?

<sup>(3)</sup>Infected animals shed FMD virus in secretions from sores, nasal discharge, milk, urine, feces, etc. FMD can be spread directly, through contact with infected animals, indirectly, through contact with a contaminated environment (shared food and water, bedding, clothes, footwear, and equipment of handlers, etc.), and through airborne transmission. Consumption of untreated, contaminated meat (mostly by pigs), ingestion of contaminated milk, and artificial insemination with contaminated semen are other routes of infection.

### How is FMD diagnosed and treated?

<sup>(2)</sup>In Canada, samples from suspected cases of FMD are sent to the Canadian Food Inspection Agency's (CFIA) National Centre for Foreign Animal Diseases where laboratory testing is done to rule out FMD diagnosis. There is no treatment for FMD.

### Prevention and Control of FMD

<sup>(2)</sup>FMD is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of FMD must be reported to the CFIA immediately, by law, for investigation. <sup>(5)</sup>Canada has been declared "free of FMD" by the World Organisation for Animal Health (OIE). To prevent entrance of FMD into the country, the CFIA has made restrictions on the import of animals and meat products from countries not "free of FMD" and requires that people entering Canada declare all animals and animal products, and their history of farm animal exposure. FMD vaccines exist but are not used in Canada.

### For more information

[CFIA fact sheet](#)

[OIE fact sheet](#)

[Merck Manual - FMD overview \(with pictures\)](#)

### References

1. Fernández Peter J., White WR. Atlas of transboundary animal diseases. Paris: World Organisation for Animal Health; 2016.
2. Fact Sheet - Foot-and-Mouth Disease. Canadian Food Inspection Agency 2012. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/foot-and-mouth-disease/fact-sheet/eng/1330481689083/1330481803452>. Accessed May 18, 2018
3. Ashford DA. Overview of Foot-and-Mouth Disease - Generalized Conditions. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/foot-and-mouth-disease/overview-of-foot-and-mouth-disease>. Accessed May 18, 2018.
4. Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018
5. List of FMD free Members: OIE - World Organisation for Animal Health. OIE - World Organisation for Animal Health. Available at: <http://www.oie.int/en/animal-health-in-the-world/official-disease-status/fmd/list-of-fmd-free-members/>. Accessed June 15, 2018.



## Pestes des petits ruminants (PPR)

### What is PPR?

Pestes des petits ruminants (PPR) is an important viral disease in countries that rely on small ruminants for economic purposes and is found in Africa, the Middle East, India and more recently Asia. PPR has never been reported in Canada.

### What are the clinical signs of PPR?

<sup>(1)</sup>Clinical signs of PPR can include fever, depression, anorexia, nasal and ocular disease, gum erosions, crusting around the lips and development of pneumonia in later stages of the disease. Diarrhea and abortions may also be present.

<sup>(2)</sup>Goats exhibit more severe clinical disease. Mortality can reach 100% in naïve populations.

### Are there any human health risks?

<sup>(2)</sup>None.

### How is PPR transmitted?

<sup>(3)</sup>Infected animals shed PPR virus in all secretions and is spread through direct contact or aerosol transmission. Fomites such as feed and bedding have also been implicated in the spread of the disease.

### How is PPR diagnosed and treated?

<sup>(2)</sup>In Canada, samples from suspected cases of PPR are sent to the Canadian Food Inspection Agency's (CFIA) National Centre for Foreign Animal Diseases where laboratory testing is done to rule out PPR diagnosis. <sup>(1)</sup>There is no specific treatment for PPR, but antibiotics may be helpful to prevent secondary pulmonary infections.

### Prevention and Control of PPR

<sup>(3)</sup>PPR is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of PPR must be reported to the CFIA immediately, by law, for investigation. <sup>(5)</sup>Canada has been declared "free of PPR" by the World Organisation for Animal Health (OIE). To prevent entrance of PPR into the country, the CFIA has made restrictions on the import of animals and meat products from countries not "free of PPR" and requires that people entering Canada declare all animals and animal products, and their history of farm animal exposure. PPR vaccines exist but are not used in Canada.

### For more information

[CFIA fact sheet](#)

[OIE fact sheet](#)

[Merck Manual - Peste des Petits Ruminants](#)

### References

1. Fernández Peter J., White WR. Atlas of transboundary animal diseases. Paris: World Organisation for Animal Health; 2016.
2. Saliki JT. Overview of Peste des Petits Ruminants. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/peste-des-petits-ruminants/overview-of-peste-des-petits-ruminants>. Accessed November 8, 2018.
3. Fact Sheet – Peste des petits ruminants. Canadian Food Inspection Agency 2012. Available at: <http://inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/peste-des-petits-ruminants/fact-sheet/eng/1330122487375/1330122649186>. Accessed November 8, 2018
4. Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018
5. List of PPR free Member Countries: OIE - World Organisation for Animal Health. OIE - World Organisation for Animal Health. Available at: <http://www.oie.int/en/animal-health-in-the-world/official-disease-status/peste-des-petits-ruminants/list-of-member-countries-free-from-ppr>. Accessed November 8, 2018.



## Q Fever (Coxiellosis)

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### What is Q fever?

Q fever is a widespread bacterial disease caused by *Coxiella burnetii* that affects many animals, including cattle, goats, and sheep. <sup>(1)</sup>It tends to have its most serious impact on pregnant animals by causing abortions and stillbirths.

### What are the clinical signs of Q fever?

<sup>(2)</sup>Q fever is usually a subclinical disease. Occasionally it may cause anorexia or late abortion.

### Are there any human health risks?

<sup>(2)</sup>Q fever is an important zoonotic disease and presents an occupational risk for farm workers, abattoir workers and veterinarians. The disease often presents as an influenza-like-illness but can progress to pneumonia, hepatitis and heart complications. Exposure usually occurs if an individual is present or assisting in a lambing or kidding event and has contact with the reproductive fluids. Pregnant women should avoid these risk situations.

### How is Q fever transmitted?

The greatest risk of transmission occurs during the birthing process by direct contact, ingestion or inhalation of birthing fluids or placenta. <sup>(1)</sup>The bacteria is also present in milk, urine and feces. <sup>(2)</sup>Ticks play a role in the transmission of disease in wild animals.

### How is Q fever diagnosed and treated?

Recent infections post-abortion can be detected by taking blood samples. Tissue can be used to detect the bacteria by various methods including culture, PCR and immunohistochemistry. <sup>(2)</sup>The use of antibiotics in the treatment of disease is controversial.

### Prevention and Control of Q fever

<sup>(3)</sup>Q fever is an annually notifiable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all lab confirmed cases of Q fever must be reported to the CFIA on an annual basis by the laboratory. There are vaccines used in areas where disease is common, but they are not available in Canada.

### For more information

[OIE technical disease card](#)

[Merck Vet Manual - Q fever](#)

### References

1. Q fever: OIE - World Organisation for Animal Health. Available at: <http://www.oie.int/en/animal-health-in-the-world/animal-diseases/Q-Fever/>. Accessed Dec 14, 2018.
  2. Plummer Paul. Overview of Coxiellosis. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/coxiellosis/overview-of-coxiellosis>. Accessed Dec 13, 2018.
  3. Government of Canada, Canadian Food Inspection Agency. Annually Notifiable Diseases. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/annually-notifiable/eng/1305672292490/1305672713247>. Accessed December 13, 2018.
  4. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed June 12, 2018
- Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018



## Rabies

### What is rabies?

<sup>(1)</sup>Rabies is a viral disease that affects the central nervous system of mammals, including humans.

### What are the clinical signs of rabies?

<sup>(2)</sup>Rabies can present in two forms, dumb and furious. The clinical signs associated with the dumb form include depression, hiding, abnormal behaviour (including unusually friendly wild animals and nocturnal animals out during the day), paralysis (most commonly of the face, neck, and/or hind limbs), changes in the tone of vocalization, and excessive drooling. The clinical signs associated with the furious form include excitement, aggression, and periods of depression. Animals may attack objects or other animals, and may also bite and chew on themselves. Clinical signs can take two weeks to several months after exposure to appear. Rabies almost always causes death once clinical signs have appeared.

### Are there any human health risks?

<sup>(2)</sup>Rabies is a zoonotic disease, meaning that it can be spread between animals and humans; however, in North America, human deaths from rabies are rare. Early vaccination following exposure to an animal suspected to have rabies can prevent illness in humans.

### How is rabies transmitted?

<sup>(3)</sup>Rabies virus is carried in the saliva of infected animals. Bite wounds are the most common route of transmission. Less commonly, rabies can be transmitted through the contact of infected saliva with scratches, open wounds, or intact mucous membranes (of the eyes, mouth, and nose). <sup>(2)</sup>The most common rabies transmitters in Canada are bats, foxes, and skunks.

### How is rabies diagnosed and treated?

<sup>(1)</sup>A definitive diagnosis is only made following the death of the animal by examining its brain. There is no treatment for rabies.

### Prevention and Control of rabies

Rabies is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of rabies must be reported to the Canadian Food Inspection Agency (CFIA) immediately, by law. Rabies vaccinations are available and encouraged for both livestock and companion animals; vaccine schedules and dosing should be discussed with a veterinarian. <sup>(5)</sup>If exposure to rabies is suspected, a risk assessment will be used to guide the decisions for response. Keeping companion animals and livestock away from wildlife is helpful to prevent exposure.

### For more information

[CFIA fact sheet](#)

[Merck fact sheet](#)

[PEI Domestic Animal Rabies Exposure Guideline](#)

### References

1. Rupprecht CE. Overview of Rabies - Nervous System. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/nervous-system/rabies/overview-of-rabies>. Accessed December 19, 2018.
2. Government of Canada, Canadian Food Inspection Agency, Animal Health Directorate. Fact Sheet – Rabies. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/rabies/fact-sheet/eng/1356155202013/1356155379445>. Accessed December 19, 2018
3. Centers for Disease Control and Prevention. Rabies, 2018. Available at: <https://www.cdc.gov/rabies/index.html>. Accessed December 19, 2018.
4. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed December 19, 2018.
5. PEI Domestic Animal Rabies Exposure Guideline. Government of Prince Edward Island 2017. Available at: <https://www.princeedwardisland.ca/en/publication/pei-domestic-animal-rabies-exposure-guideline>. Accessed December 20, 2018.



## Rift Valley Fever (RVF)

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### What is RVF?

Rift Valley Fever (RVF) is a viral disease that affects sheep, goats, cattle and other wild animals. It is transmitted by certain species of mosquitos and is most commonly found in sub-Saharan Africa.

### What are the clinical signs of RVF?

<sup>(1)</sup>Clinical signs of RVF can include fever, depression, decreased appetite, increased respiratory rate, and bloody diarrhea. Young animals are highly susceptible to disease often die prior to any clinical signs of illness. Pregnant animals can have experience abortion storms.

### Are there any human health risks?

<sup>(2)</sup>RVF is a zoonotic disease. <sup>(3)</sup>Humans handling infected animals and meat (and possibly milk) are at risk. People infected may experience influenza-like illness and most recover within a week. In rare instances, human infection can cause severe disease.

### How is RVF transmitted?

<sup>(3)</sup>As RVF is a vector-borne disease, it is transmitted through the bite of an infected mosquito. Outbreaks tend to be most common after sustained rain events and flooding.

### How is RVF diagnosed and treated?

<sup>(1)</sup>Laboratory testing is required to make a diagnosis of RVF although the disease can be suspected based on clinical signs and insect activity in the areas where it is known to occur. There is no treatment for the disease.

### Prevention and Control of RVF

<sup>(2)</sup>RVF is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of RVF must be reported to the CFIA immediately, by law, for investigation. To prevent entrance of RVF into the country, the CFIA has made restrictions on the import of animals and meat products from countries not “free of RVF”. There are vaccines available to protect against RVF in areas where the disease is present.

### For more information

[CFIA fact sheet](#)

[OIE fact sheet](#)

[Merck Manual - RVF](#)

### References

1. Fernández Peter J., White WR. Atlas of transboundary animal diseases. Paris: World Organisation for Animal Health; 2016.
2. Fact Sheet – Rift Valley Fever. Canadian Food Inspection Agency 2012. Available at: <http://inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/rift-valley-fever/fact-sheet/eng/1329685061778/1329685186043>. Accessed Sept 25, 2018
3. Thompson PN. Overview of Rift Valley Fever. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/rift-valley-fever/overview-of-rift-valley-fever>. Accessed Sept 25, 2018.
4. Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018



## Scrapie

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### What is Scrapie?

Scrapie is a progressive and fatal disease of sheep associated with the accumulation of abnormal proteins (prions) in nervous tissue. <sup>(1)</sup>It is a transmissible spongiform encephalopathy (TSE) and is related to bovine spongiform encephalopathy (BSE) in cattle, chronic wasting disease (CWD) in cervids, and Creutzfeldt-Jakob Disease (CJD) in humans.

### What are the clinical signs of Scrapie?

<sup>(1,2)</sup>Signs can include incoordination, weakness, paralysis and sometimes pruritis (intense itching). <sup>(1,3)</sup>Signs usually appear several years after exposure, but once an animal becomes ill, it will die within months. Owners may not be aware of the disease in their flock/herd given the great variation of clinical signs.

### Does Scrapie have any human health risks?

<sup>(3)</sup>Based on current evidence, there is no known risk to human health.

### How is Scrapie transmitted?

<sup>(3)</sup>Scrapie is transmitted from exposure to other scrapie-infected animals and their environment. Of particular risk is the exposure that occurs during the birth environment as the fluid and tissue from the placenta contains large quantities of infectious prions. Prions have also been found in milk, feces, saliva and urine.

### How is Scrapie diagnosed and treated?

<sup>(3)</sup>Confirmation of disease must be done in a laboratory by examining the animal's brain after its death, however there is a third eyelid or rectal lymphoid tissue biopsy that can be taken from live animals to identify scrapie-infected animals. There is no treatment for the disease.

### Prevention and Control of Scrapie

<sup>(3)</sup>Scrapie is a reportable disease under the Federal Health of Animals Act<sup>(5)</sup>, meaning that all suspected cases must be reported to the Canadian Food Inspection Agency (CFIA) immediately, by law, for investigation. <sup>(3)</sup>Canada has a National Scrapie Eradication Program to protect the national sheep flock and goat herd. Genetic testing of sheep is also recommended for producers that want to minimize their risk of scrapie as some sheep are resistant to infection.

### For additional information

[CFIA fact sheet](#)

[Merck Veterinary Manual - Overview of Scrapie](#)

### References

1. Bulgin Marie. Scrapie. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/nervous-system/scrapie/overview-of-scrapie>. Accessed Nov 15, 2018.
2. Radostits O. Herd Health – Food Animal Production Medicine (3<sup>rd</sup> Ed.). Philadelphia, W. B. Saunders Company. 2001.
3. Government of Canada, Canadian Food Inspection Agency. Fact Sheet - Scrapie. Canadian Food Inspection Agency 2017. Available at: <http://inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/scrapie/fact-sheet/eng/1356131973857/1356132310673>. Accessed Nov 15, 2018.
4. Alberta Agriculture and Forestry, Livestock and Crops Division, Animal Health and Assurance Branch, Animal Health Section. Bovine Spongiform Encephalopathy (BSE) Fact Sheet. Alberta Agriculture and Forestry 2015. Available at: [https://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/cpv8104](https://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cpv8104). Accessed June 15, 2018.
5. Government of Canada, Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018





## Sheep and Goat Pox (SGP)

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### What is Sheep and Goat Pox?

<sup>(1)</sup>Sheep and Goat Pox are distinct Capripoxviruses which can cause disease in sheep and goats. The virus is closely related to Lumpy Skin Disease in cattle. The disease occurs in Africa and some parts of the Middle East and Asia but has never been found in Canada.

### What are the clinical signs of Sheep and Goat Pox?

<sup>(2)</sup>Clinical signs of SGP include fever and depression, the development of blister-like lesions which will erupt and then scab over. <sup>(3)</sup>Lesions are particularly visible on hairless areas such as muzzle and ears. Additional symptoms include excessive salivation, loss of appetite and reluctance to move. Depending on the severity of the disease, mortality can be as high as 50% in adults to 100% in young animals.

### Are there any human health risks?

<sup>(2)</sup>None.

### How is Sheep and Goat Pox transmitted?

<sup>(3)</sup>The virus is found in ulcerated papules, scabbed over skin lesions, saliva, ocular and nasal discharge, milk, urine and feces. <sup>(1)</sup>Infection is spread by aerosol after direct contact with infected animals exhibiting ulcerated papules. Although a minor component in transmission, insect transmission or indirect transmission through contaminated products can occur.

### How is Sheep and Goat Pox diagnosed and treated?

<sup>(2)</sup>Clinical signs may lead to suspicion of the disease; laboratory testing is required for confirmation. There is no specific treatment.

### Prevention and Control of Sheep and Goat Pox

<sup>(2)</sup>SGP is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of SGP must be reported to the CFIA immediately, by law, for investigation. To prevent entrance of SGP into the country, the CFIA has made restrictions on the import of animals and meat products from countries not “free of SGP”. SGP vaccines are used in countries where the disease is known to occur.

### For more information

[CFIA fact sheet](#)

[OIE technical disease card](#)

[Merck Vet Manual - Sheep and Goat Pox](#)

### References

1. Fernández Peter J., White WR. Atlas of transboundary animal diseases. Paris: World Organisation for Animal Health; 2016.
2. Fact Sheet – Sheep and Goat Pox. Canadian Food Inspection Agency 2014. Available at: <http://inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/sheep-and-goat-pox/fact-sheet/eng/1330068538425/1330069218800>. Accessed Nov 15, 2018
3. Gibbs Paul. Lumpy Skin Disease. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/integumentary-system/pox-diseases/sheep-pox-and-goat-pox>. Accessed Nov 15, 2018.
4. Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 22, 2018



## Vesicular Stomatitis (VS)

### What is VS?

Vesicular stomatitis (VS) is a viral disease affecting horses, ruminants, and swine . VS has a very similar clinical presentation to foot-and-mouth disease.

### What are the clinical signs of VS?

<sup>(1)</sup>Clinical signs of VS can include fever, excessive drooling, unwillingness to eat or drink, decreased milk production, lameness, and blisters and sores on the mouth, lips, nose, udder, and hooves. Animals usually recover 3-4 days after the onset of clinical signs.

### Are there any human health risks?

<sup>(1)</sup>VS is a zoonotic disease, meaning that it can be spread from animals to humans. Humans infected with VS generally present with flu-like symptoms.

### How is VS transmitted?

<sup>(2)</sup>VS virus is shed in saliva and fluid from the blisters and sores of infected animals. Transmission of VS can occur from direct contact with infected animals or contact with a contaminated environment. Consumption of contaminated food or water and milking procedures may also lead to transmission.

### How is VS diagnosed and treated?

<sup>(3)</sup>Diagnosis is made using laboratory testing of the fluid from the blisters or of blood. There are no treatments for VS.

### Prevention and Control of VS

<sup>(3)</sup>VS is a reportable disease under the Federal Health of Animals Act<sup>(4)</sup>, meaning that all suspected cases of VS must be reported to the Canadian Food Inspection Agency (CFIA) immediately, by law, for investigation. <sup>(3)</sup>If a diagnosis of VS is confirmed, quarantine is imposed and is only lifted after thirty days with no clinical signs. The CFIA may also require susceptible animals entering Canada from a country that has recently had a VS outbreak to be examined by a federal veterinarian and come with a certification of health from the veterinary authorities of the exporting country.

### For more information

[CFIA fact sheet](#)

[Merck fact sheet](#)

[CFSPH resources with pictures](#)

### References

1. Traub-Dargatz JL. Overview of Vesicular Stomatitis - Generalized Conditions. Merck Veterinary Manual. Available at: <https://www.merckvetmanual.com/generalized-conditions/vesicular-stomatitis/overview-of-vesicular-stomatitis>. Accessed May 28, 2018.
2. Vesicular Stomatitis. Center for Food Security and Public Health. Available at: <http://www.cfsph.iastate.edu/DiseaseInfo/disease.php?name=vesicular-stomatitis&lang=en>. Accessed May 28, 2018.
3. Government of Canada, Canadian Food Inspection Agency. Vesicular stomatitis. Canadian Food Inspection Agency 2015. Available at: <http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/vesicular-stomatitis/eng/1306638312439/1306638597634>. Accessed May 28, 2018.
4. Legislative Services Branch. Consolidated federal laws of Canada, Health of Animals Act. Available at: <http://laws-lois.justice.gc.ca/eng/acts/H-3.3/>. Accessed May 28, 2018

## Appendix II PEI Small Ruminant and Camelid Emergency Response Advisory Team

PEI Sheep Breeders Association	Darryl Stolz	darryl.rachel.stoltz@gmail.com
Goat Representative	Flory Sanderson	(902) 218-1673
Camelid Representative	Janet Ogilvie	(902) 303-0647
Canadian Food Inspection Agency	Dr. Martha Hagar	(902) 393-2860
PEIDA	Dr. Jill Wood  Kelly Hughes  Dr. Yosdany C. Garcia  Jeffery Campbell	(902) 370-4923 (902) 218-2665  (902) 368-5654 (902) 314-0814  (902) 316-1095  (902) 218-3568

## Appendix III SRCERAT Roles and Responsibilities

### **Roles and Responsibilities**

1. Activate and deactivate the Small Ruminant and Camelid Emergency Response Plan.
2. Provide direction to manage the industry response.
3. In the case of a presumptive positive diagnosis of a FAD, SRCERAT will:
  - a) Activate the Emergency Response Plan.
  - b) Consult with CFIA, PEIDA, the affected producer, and their veterinarian on the merits of self-quarantine, movement control, and depopulation.
  - c) Arrange for any assistance and information that might be required by the producer (depopulation and disposal protocols, materials and equipment, biosecurity procedures, etc.).
  - d) Inform all producers, feed mills, processors, and other industry services in the province within, or operating within, a 10 km radius of the suspect farm of an industry declared **Yellow Alert/Enhanced Biosecurity** and recommend heightened biosecurity be put in place.
4. Authorize and direct the commitment of industry resources.
5. Recommend movement controls.
6. Participate in a joint PIT, established by CFIA. The SRCERAT will be the official spokesperson for industry throughout an emergency. SRCERAT may assign individual members as a spokesperson for their sector as required.

7. Provide specialized knowledge, advise on industry infrastructure, industry politics and relationships to CFIA, EMO and other agencies, as well as provide connections to other resource people.
8. Maintain a log of ALL group activities for use during the debriefing process.
9. Each member is responsible for maintaining individual logs during any emergency.
10. Prepare situation reports during the response to emergencies.
11. Provide government agencies (CFIA, EMO, PEIDA) with any geographical data and information of small ruminant and camelid producers and industry support groups in the province as might be required.
12. Maintain an updated list of contacts for the emergency plan.
13. Prepare and disseminate information to the industry (nationally, provincially) on the state of the emergency. Responsible for notifying industry members of the actions of the SRCERAT during a response to an emergency.

## Appendix IV Small Ruminant and Camelid Emergency Response Contacts

Group	Contact	Organization	Office Tel.	Cell	Home Tel.	Fax	Email
PEI Sheep Breeders Association	Darryl Stoltz	PEI Sheep Breeders Association		902-218-8728			darryl@qualitysheep.com
PEI Goat Representative	Flory Sanderson	Island Hill Farm		902-218-1673			islandhillfarm@gmail.com
PEI Camelid Representative	Janet Ogilvie	Green Gable Alpacas		902-303-0647			jogilvie@greengablealpacas.com
Feed Mills	Trevor Towers	Trouw Nutrition		902-940-2671			Trevor.Tower@trouwnutrition.com
Feed Mills	Mary Grant	Cardigan Feeds	902-583-2055				marygrant@pei.sympatico.ca
Provincial CFIA	Dr. Martha Hagar, DVM	CFIA, Charlottetown	902-566-7290 Ext. 2038	902-393-2860		902-566-7290	Martha.Hagar@inspection.gc.ca
Provincial CFIA District Veterinarian	Lauren Howard, DVM	CFIA, Charlottetown	902-566-7290 Ext. 2038	782-324-1078		902-566-7290	Lauren.howard@inspection.gc.ca
Atlantic CFIA Regional Vet Officer	Dr. Lynn Hood	CFIA	902-698-9237				Lynn.hood@inspection.gc.ca
Atlantic CFIA Emergency Coordinator	Suzanne Nadeau	CFIA, Moncton	506-777-3925			506-777-3942	suzanne.nadeau@inspection.gc.ca
Atlantic CFIA Communications Officer	Greg Rogers	CFIA, Moncton	506-378-0294			506-851-2689	Greg.Rogers@inspection.gc.ca
Assistant Deputy Minister Agriculture	Carolyn Sanford, DVM	PEIDA	902- 368-5660	902-628-7072		902-368-4857	cjsanford@gov.pe.ca
Provincial Agriculture Chief Veterinary Officer	Dr. Jill Wood	PEIDA	902-370-4923	902-218-2665			jswood@gov.pe.ca
Provincial Agriculture	Kelly Hughes	PEIDA	902-368-5654	902-314-0814		902-368-4857	kellyhughes@gov.pe.ca
Provincial Agriculture	Dr. Yosdany C. Garcia	PEIDA		902-316-1095			ycgarcia@gov.pe.ca
Provincial Agriculture	Jeffrey Campbell	PEIDA	902-368-4145				cjwood@gov.pe.ca
Provincial Agriculture	Dwight Thompson	PEIDA - Regulatory	902-620-3119	902-620-3119			DKTHOMPSON@gov.pe.ca
AVC-DS	Liz Dobbin	Director, Diagnostic Services	902-566-0831	902-316-2426		902-566-0723	edobbin@upe.ca

AVC-DS	Andrea Bourque	Anatomical Pathologist	902-566-0855	902-628-9492			abourque@upei.ca
AVC-DS	Weekend/after hours	Post-Mortem	902-566-0871	902-626-7737			
Provincial Health and Wellness	Ryan Neale	PEIHW – Environmental Health	902-368-4142	902-314-2222			rwneale@gov.pe.ca
Provincial Health and Wellness	Dr. Heather Morrison	PEIHW – Public Health Office	902-368-4996	902-314-5694		902-620-3354	hgmorrison@gov.pe.ca
Provincial Environment, Energy and Climate Action	Greg Wilson	PEIDEECA - Environmental Land Management	902-368-5274				gbwilson@gov.pe.ca
Provincial Justice and Public Safety	Office	PEIJPS - Emergency Measures	902-894-0385 1-877-894-0385			902-368-6362	publicsafety@gov.pe.ca
Provincial Justice and Public Safety	Emergency (24 hrs)	PEIJPS - Emergency Measures	902-892-9365 1-888-294-9909				
Provincial Justice and Public Safety	Dakota Murray	PEIJPS - Emergency Measures		902-394-6350		902-368-6362	dakotamurray@gov.pe.ca
Federal EMO (Public Safety Canada)	Simon Hofley	Public Safety Canada	613-408-8613				Simon.hofley@ps-sp.gc.ca
Federal Environment and Climate Change	Becky Whittam	Atlantic Canadian Wildlife Services	506-364-5189			506-364-5062	becky.whittam@canada.ca
Provincial Environment, Energy and Climate Action	Andrew Ing	PEIPT-ITSS (GIS)	902-368-6471	902-394-4481			aring@gov.pe.ca
Department of Transportation and Infrastructure	Stephen Szwarc	TIE Director, Highway Maintenance	902-368-5103	902-394-5946			sjszwarc@gov.pe.ca

Confederation Bridge	Bridge Control (24/7)		902-437-7349				
Emergency Animal Response Team (EART)	Ron McConnell Lynn Davis	EART	902-439-2262 902-954-1287				<a href="mailto:emergencyanimalresponseteam@gmail.com">emergencyanimalresponseteam@gmail.com</a>
Canadian Sheep Breeders Association	Linda Brandes	CSBA	1-866-956-1116			1-877-207-2541	Office@sheepbreeders.ca
Canadian Goat Society		Canadian Goat Society	613-731-7110	1-877-833-7110			info@goats.ca
Alpaca Canada		Alpaca Canada	1-877-755-7222				info@alpacacanada.com



## Appendix V Disaster Emergency Response Plan

Risks to the small ruminant and camelid industries can occur beyond the scope of a disease outbreak. Natural and man-made disasters can pose significant risk to human and animal health, property, and markets. It is important to identify potential risks and take steps to prevent and prepare for those possibilities, thereby enabling efficient response and recovery. Potential disasters may include, but are not limited to;

- Fire
- Severe weather (i.e. ice storms, hurricanes, etc.)
- Prolonged power outages
- Structure collapses
- Hazardous material spills
- Gas leaks

In such circumstances, special measures may be required to shelter, care for, or transport livestock, or prepare for potential mass disposal. By planning ahead, you will already have in place pertinent information that will be required to respond during a crisis situation. Being prepared will save crucial time and make for a more efficient response.

### Developing a Disaster Emergency Response Plan

The following are steps a producer can take to develop their own farm Disaster Emergency Response Plan. The Plan should be kept where it is accessible to all family, staff working on the farm, and emergency responders. In addition, a back-up copy should be kept off site. For example, an electronic version could be kept on a data sharing application such as Dropbox, iCloud, Google Drive, etc.

### Self-Assessment

How prepared are you if an emergency should strike? Have you taken the necessary steps to minimize the impact and severity of an emergency? Make a list of potential risks and hazards that could be faced by your farm. Identify potential practices or strategies which could be implemented to prevent mitigate potential. The [Nova Scotia](#)

[Livestock Sector Emergency Producer Handbook](#) contains a Testing Your Readiness checklist which can be used as a tool by producers.

### *Prepare Key Information*

Key information to have available during an emergency response includes:

- An up-to-date contact list of individuals you would need to reach in case of an emergency.
- An inventory of animals, including approximate ages and sizes, on farm
- An inventory of emergency equipment and supplies
- An inventory of equipment, vehicles, and machinery
- An inventory of hazardous materials
- A map of the farm including;
  - Description and location of facilities, animals, and equipment
  - Clearly identified locations of flammable or hazardous materials
  - Identify locations of water supplies
  -

### *Training*

Human safety is the first priority. Ensure you, your family, and your employees have first aid training. In addition, train or provide training to family members and employees on the proper use of emergency equipment, power supply shut-off, stopping the flow of liquids and gases, etc. Keep up to date documentation on all completed training.

### *Review and Update Plan Annually*

Emergency plans should be reviewed and updated each year or whenever there are significant changes, whichever is sooner. Test the emergency plan on occasion to help identify any potential issues or gaps that could be addressed prior to an emergency.

### *Additional Resources*

#### **Producer Handbook: Preparing the Nova Scotia Livestock Sector for Disease-Related Sector-Wide Emergencies**

([chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://animalhealth.ca/wp-content/uploads/2020/08/AHEM\\_NS\\_Handbook.pdf](chrome-extension://efaidnbmnnnibpcajpcgclefindmkaj/https://animalhealth.ca/wp-content/uploads/2020/08/AHEM_NS_Handbook.pdf))

#### **Emergency Preparedness for Farm Animals**

From the Government of Canada

(<https://www.getprepared.gc.ca/cnt/rsrcls/pblctns/frm-nmls/index-en.aspx>)

## Appendix VI Document Revisions

Updated department names and team members and appendix IV contact information	October 2022- Saad Cheema
Updated department names and team members, contact information, minor words changing and formatting	February 2024 – Kelly Hughes