Beef Foreign Animal Disease Workshop

Guelph

Wednesday, November 19, 2014

WORKSHOP SUMMARY
# Beef Foreign Animal Disease Workshop Summary

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1. Executive Summary

The Ontario Livestock and Poultry Council (OLPC), in conjunction with Beef Farmers of Ontario (BFO), OMAFRA and the Animal Health Laboratory at the University of Guelph, held a Beef Foreign Animal Disease Workshop on November 19, 2014 in Guelph. Invitations were extended to a broad cross-section of industry stakeholders including producers, veterinarians, feed and service suppliers, processors, government and emergency response. The objective of the workshop was to improve the preparedness of the beef industry for a foreign animal disease (FAD) outbreak. A copy of the agenda is included in section 2 and the list of attendees is presented in section 3.

The morning program consisted of a number of speakers and presentations on emergency preparedness and response. The topics were geared toward assisting participants develop a better understanding of what CFIA, OMAFRA and the Animal Health Laboratory will do if there is a FAD in Ontario and also what is expected/needed from the beef industry. Copies of the presentations are included in section 4.

The afternoon session focused around a tabletop disease exercise. Our scenario used “Lips-and-toes-is”, a fictitious disease with characteristics like foot and mouth disease (FMD). To avoid any possibility of a trading partner erroneously thinking the exercise was a real outbreak of FMD, we used the term “lipsandtoesis” in all our print material.

The objectives of the simulation were:
1. Increased awareness of how a foreign animal disease outbreak could unfold.
2. Understand the response activities needed for an animal disease emergency.
3. Identify the current resources available at the local, provincial and federal level to assist and support a response.
4. Determine personnel and stakeholder groups’ roles and responsibilities when assisting and supporting an animal disease response.
5. Identify critical areas that may be impacted by an animal disease emergency.
6. Encourage workshop attendees to take steps to become better prepared to respond to a foreign animal disease.

Each table was assigned a role to play, e.g. beef farm, BFO association office, other agricultural associations and groups, veterinary clinic, CFIA, farm suppliers and service table, and OMAFRA. Each table had participants with experience/background other than the role designated. The role playing was designed to stimulate conversation among stakeholders regarding the necessary assets, vulnerabilities and response resources including personnel, skill sets, equipment and supplies.

The intent was to get people actively thinking about and discussing what they know and have learned about FAD response so that they can take steps to become better prepared for a real outbreak.

Bryan Boyle then facilitated an interactive session to identify the perceived strengths, weaknesses and possible actions around FAD response in the sector. His complete report is contained in section 6. The six key focus areas identified by attendees in descending order of priority were: communication; training and education; stakeholder engagement; financial resources; legislation and protocols; and research.

November 2014
Participants suggested possible next steps and action items for each of the key focus areas. Those are noted on page 82 of this report (page 9 of Bryan’s report).

The ratings and comments on the feedback sheets submitted by attendees were very good. Participants definitely found value in the day. See section 7 for the complete feedback sheet summary. As noted above, there were several actionable items and areas identified for potential follow-up. We will be encouraging participants to collaborate on the items which fall within their particular mandate.
2. Workshop Agenda

Beef Foreign Animal Disease Workshop
Springfield Golf and Country Club
Tamarack Room
2054 Gordon Street, Guelph
Wednesday, November 19, 2014
9:00 a.m. to 4:00 p.m.

Agenda

Chair: Gordon Coukell, OLPC

9:00 a.m. Welcome – Richard Horne, Manager of Policy and Issues, Beef Farmers of Ontario

9:05 a.m. Opening Remarks – Dr. Greg Douglas, Chief Veterinarian for Ontario

9:15 a.m. “Principles of Disease Spread and Control” – Dr. Tim Pasma, Ontario Ministry of Agriculture, Food and Rural Affairs

9:30 a.m. “How will CFIA Respond to a Disease Outbreak?”
Dr. Robyn Budgeon, Canadian Food Inspection Agency

10:00 a.m. “What is OMAFRA’s Emergency Response to a FAD?”
Dr. Cathy Furness, Ontario Ministry of Agriculture, Food and Rural Affairs

10:30 a.m. Break

10:50 a.m. “What is the Animal Health Laboratory’s Role?”, Dr. Grant Maxie, Animal Health Laboratory

11:20 a.m. “What is the Potential Economic Impact?”, Kenneth Poon, Department of Food, Agricultural and Resource Economics, University of Guelph

11:50 a.m. “Lessons Learned from FMD Outbreaks in the U.K. and South Korea”
Dr. Robyn Budgeon, Canadian Food Inspection Agency

12:20 p.m. Lunch

1:00 p.m. Tabletop Simulation
– Cathy Furness, OMAFRA and Susan Fitzgerald, OLPC

2:15 p.m. FAD Response Preparedness – strengths, weaknesses and next steps
- Bryan Boyle, Bryan Boyle & Associates

3:45 p.m. Wrap-up and Feedback Sheets - Dan Ferguson, Manager of Producer Relations, Beef Farmers of Ontario

4:00 p.m. Adjourn
### 3. List of Attendees

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<th>Company/Association</th>
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<tr>
<td>Avoledo</td>
<td>Sara</td>
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<tr>
<td>Boyle</td>
<td>Bryan</td>
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Beef Foreign Animal Disease Workshop Summary

4. Morning Presentations

“Principles of Disease Spread and Control” – Dr. Tim Pasma, Ontario Ministry of Agriculture, Food and Rural Affairs

Principles of Disease Spread and Control

Beef Foreign Animal Disease Workshop
November 19, 2014

Disease control is important because outbreaks are expensive.

- Costs involved in a foreign animal disease outbreak:
  - direct costs – control and eradication of the outbreak
  - direct consequential costs – preventing spread to unaffected farms
  - indirect consequential costs – market disruption
  - aftermath costs – after the outbreak is resolved

- A foot and mouth disease outbreak will cost between $16 to $47 billion, depending on the size of the outbreak.

- What can be done to prevent and minimize the spread of a disease outbreak?
The reproductive rate of an outbreak represents the number of new cases infected by a case.

- Case = infected person, animal, farm
- If $R = 2$, an infected farm will infect 2 other farms.
- If $R > 1$, the outbreak will grow.

If $R < 1$, the outbreak will shrink.
The earlier control measures are put into place, the better.

- A high reproductive rate means that an outbreak will grow rapidly.
- But it also means that control measures are just as powerful.
We can prevent and control outbreaks through the factors that affect the reproductive rate.

Reproductive rate =

duration of infectivity (how long infectious?)

X

contact frequency (how many contacts?)

X

transmissibility (how likely to spread?)

X

susceptibility (will the contact get sick?)

Reducing the duration of infectivity will reduce the reproductive rate.

- Early detection and quick diagnosis
- Isolating and quarantining sick animals
- Depopulation of infected or nearby farms
Good biosecurity will reduce contact frequency.

- Quarantine and movement controls during an outbreak
- Minimizing on- and off- farm traffic
- Limiting the number of farms that are contacts
- Preventing airborne spread (difficult)
- Minimizing contact with super-spreaders

Transmissibility can be reduced through good sanitation.

- Washing your hands
- Quarantining additions to a herd
- Using all-in / all-out production
- Cleaning and disinfection
Increasing immunity will reduce susceptibility.

- Vaccination
- Deliberate exposure

Disease control is everyone’s job!

- Detect diseases quickly and keep sick animals separate from healthy ones.
- Practice good biosecurity and sanitation.
- Vaccinate your animals and keep them healthy.
References


“How will CFIA Respond to a Disease Outbreak?”, Dr. Robyn Budgeon, Canadian Food Inspection Agency

**Permits, Zones and Lips-and-toes-is, Ontario- BFO Workshop**

**Canadian Food Inspection Agency**

**Dr. Robyn Budgeon**  
**Operational Specialist, Animal Health, Ontario Area, CFIA**  
**November 2014**

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**Outbreak of Lipsandtoesis - What does the CFIA do?**

**What?**
Our job is to control the outbreak and stop the spread of the disease.

**Why?**
Consistent with CFIA Mission Statement:
Dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada’s people, environment and economy.

**How?**
The regulatory authority invested in the Agency by the Health of Animals Act allows us to carry out disease control activities.
How do we stop the disease spread?

- Eradication or stamping out activities
- Cleaning and disinfection of infected premises
- Surveillance activities
- Tracing activities - in-contact animals and things
- Movement restrictions

Movement Restrictions - what does this mean?

- With any high risk suspect or “presumptive case” CFIA would place a Declaration of Infected Place immediately on each premises with susceptible species within 3 km of the index premises
- Nothing moves on or off these premises unless licenced by a CFIA Inspector
- CFIA controls the animals and all related "things" - not people
Movement Restrictions
Voluntary

- Initially, movement control during this initial phase is *voluntary* on the part of industry to contain spread.

- Associated industries will be asked to "stand down" on movement until the Minister can declare a Primary Control Zone (more later).

- Until the disease is confirmed, the CFIA will *not* have imposed global movement controls. Only those farms with a Declaration will have movement restrictions.

What can you do?

- Industry’s role is crucial here – use your expertise, preparations and network to protect your industry.

- Industry ‘alert’ can be issued.

- Voluntary movement stop on part of producers.

- Voluntary *enhanced* biosecurity procedures.
Movement Restrictions - what next?

- Once disease is confirmed the Minister of Agriculture will declare a Primary Control Zone.

- This means there will be movement restrictions for certain animals and things in certain geographical areas of Canada.

Declaration of a Primary Control Zone

What does this mean?

It means the Minister of Agriculture believes:

1. ... that a disease ... exists in an area, (and) he ... may, by order, declare the area to be a primary control zone, (and) ... shall describe the zone and identify the disease ... .

2. The Minister may, by order, designate any animal or thing that is capable of being affected or contaminated by the disease ... .

3. No person shall remove from, move within or take into the primary control zone a designated animal or thing except in accordance with a permit issued by the Minister.
What does this mean?

- This means a **permit** will be necessary for **all animal movement** within the Primary Control Zone and **all movement of animal related things**.

- It is not optional

- CFIA issues these permits

- The holder of the permit must meet the conditions on the permit.

What about movement inside the Primary Control Zone?

- Within the Primary Control Zone, there are sub zones

- Infected Zone, Restricted Zone and Security Zone

- Movement within and through each of these zones requires the holder of the permit to meet certain conditions

- The conditions on the permit are more restrictive the closer you get to the higher risk areas (Infected Zone).

- In some cases, movement may be prohibited altogether
Risk of disease spread decreases as one moves out from infected zone

Starting from the Infected Zone, each zone has decreasing movement restrictions to reflect decreasing risk of disease presence or spread.

Infinity and Beyond = Free Zone

The default for the Primary Control Zone is that all designated animals and things are prohibited to move without a permit.
Movement Restrictions and Zones
How are they related?

- The restrictions imposed in these zones relate to the risk of moving the animal or thing with respect to risk of spreading the disease.

- Movement restrictions decrease with distance from infected premises.

  Most restrictive  
  Least restrictive

  - Infected Zone
  - Restricted Zone
  - Security Zone
Permits? Schmermits!!!!
What do you mean?
How do we continue to do our business?

- What is this permit system and how does it work?
  - Basically where are you, what do you want to move and where do you want to move it?
  - Many variables in deciding on type of permit which will be needed
    - Risk of product (live animals vs feed from a feed mill)
    - Risk of location of origin (proximity to infected premises)
    - Risk of location of destination (is going to the Free Zone or just moving within the Infected zone?)

General Permits
Lower Risk Activities

- Applicable to a movement for which permission is granted without the need of testing or inspection.

- Blanket permission to move “designated animals and things” if certain conditions are respected

- Should be available from the CFIA website
  - “Do it yourself” issuing
  - Bearer must carry the permit at all times

- CFIA cannot possibly monitor all movements associated with these “general” permits.
Specific Permits

Higher Risk Activities

- Special permission to move "designated animals or things" within the various sub-zones.

- Specific Permits will be issued by the CFIA.

- **CANNOT** be downloaded from the CFIA’s website. You must fill out an application.

- Specific permits are issued based on the results of testing, inspections or approvals of biosecurity plans.

How do I get a Specific Permit?

- You have to apply to the CFIA.

- Application and instructions to apply for a specific permit will be on the website.

- Requested by the person who wants to move something from one location to another. This person could be:
  - The owner of the animal or thing
  - The person in possession of the animal or thing
  - The processing plant or slaughter plant owner
  - The manager of the herd at the origin and/or at the destination.
How do I get a Specific Permit?

- Example: Movement of Live Ruminants from a Premises to Slaughter (from Restricted Zone to Security Zone)
- Apply in advance
- CFIA will have to inspect the herd 24 hours before loading—must make this arrangement at time of application
- Mandatory participation in applicable surveillance program
- Review of records of clinical health of herd
- No new introductions to herd within 14 days
- Transporter will have to have approved SOPs for cleaning and disinfection—this can be done in advance and you must provide this information to the permitting officer to ensure they meet the C and D requirements of the zone

How do I get a Specific Permit?

- Routing must be provided with application and approved by CFIA
- Abattoir must be approved and able to accommodate the animals on that particular date
- Movement must always be accompanied by a hard copy of the permit
### Movement of Live Swine or Ruminants from a Premises to Slaughter

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All vehicles transporting livestock must also be in possession of the permit entitled "Movement of Vehicles On to or Off of Premises with Susceptible Species".

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### Summary

- Normal record keeping, biosecurity and transportation policies will not suffice.
- Understand there will be NO EXPORT market at all.
- Be aware that "clean" means "clean" and not somewhere in between.
“What is OMAFRA’s Emergency Response to a FAD?” Dr. Cathy Furness, Ontario Ministry of Agriculture, Food and Rural Affairs

Approach to Disease Response in Ontario
The OMAFRA perspective

Foreign Animal Disease Workshop
Beef Farmers of Ontario
November 19th, 2014
Cathy Furness DVM, MSc
Lead Veterinarian – Planning and Preparedness
Agricultural Emergencies are **Different**

- Involvement of animals changes the game
  - Can be very complex
- Agricultural emergencies are associated with many challenges:
  - Financial, emotional, food safety, animal health, inter provincial and international trade, resource availability, public perceptions, welfare concerns
- Responders “don’t speak the same language”
- There are no cookie cutter formulas

---

**In each incident – specific functions must be performed**

- Identify and assess the problem
- Acquire and pay for the resources to solve the problem
- Develop and implement a plan to deal with the problem
- Communicate the problem
If plan A doesn't work, the alphabet has 25 more letters
- 204 if you're in Japan.
Claire Cook

That tool is ICS

Standardized, onsite management system designed to enable effective, efficient incident management by the integration of facilities, equipment, personnel, procedures and communications with a common organizational structure. ICS Canada
Why is ICS important to industry?

- Often dealing with large scale problems that will have significant impact to the industry
  - Disease, market collapse, welfare issues
- Industry group leaders are called upon to be champions in animal health and welfare – you are expected to have answers
  - Need to be able to make “good” decisions with relative efficiency
    - Dealing with human/animal/financial interface
- Industry will have to coordinate with MANY stakeholder organizations

Where does industry “fit in” to a Disease response?

![Image of cattle]
Disease Response – OMAFRA Perspective

Ministry Priorities

- Thriving agriculture and food sectors
- Strong rural economies
- Safe food, healthy animals and healthy environment

November 2014
**Animal Health Act 2009**

- The Act helps to protect animal and human health by reducing the impact of animal diseases
  - Complements other OMAFRA activities – disease prevention
  - Complements other legislation – FSA
- Designates a Chief Veterinary Officer
  - Inspectors
    - Role of inspectors is to evaluate animal health
    - Powers to hold, detain, seize
    - Compensation

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**Regulations = Tools**

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<th>Description</th>
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<td>Reportable</td>
<td>Any person who suspects disease must report</td>
<td>Ontario doesn’t have any!</td>
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<td>Black leg</td>
</tr>
</tbody>
</table>
Animal Health Hazards
Guiding Principles

An Animal Health Hazard Strikes....
### Immediately Notifiable

<table>
<thead>
<tr>
<th>Odd characteristics</th>
<th>Numbers of animals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species involved</td>
<td>Risk to economy</td>
</tr>
<tr>
<td></td>
<td>Risk to herd population</td>
</tr>
</tbody>
</table>

### What happens next?

### What is the process?

*What is the Risk? What is the impact of the risk?*
The Response

- The response is based upon the Guiding Principles
  - Proportional to the risk
  - Gathers the information necessary to assess the risk
  - Collaborative
  - Addresses human and animal health concerns
  - Attempts to be economically feasible

Things to keep in mind

- Most animal health issues WILL NOT necessitate a response from OMAFRA
- Open lines of communication are key
  - Veterinarian to producer
  - OMAFRA to veterinarian
- If a detection of a disease does necessitate a response – then it will be proportional to the risk of the disease
"What is the Animal Health Laboratory’s Role?”, Dr. Grant Maxie, Animal Health Laboratory

Organizational chart, reporting relationships
Disease simulations involving industry in Ontario

- 2014 Beef FAD Workshop
- 2013 Poultry simulation
- 2012 Small ruminant table-top simulation
- 2011 Pork table-top simulation
- 2010 Poultry field simulation
- 2007 (Pork table-top)
- 2005 Dairy/veal exercise
- 2004 Field exercise-poultry
- 2003 Table-top exercise-poultry

Services provided by the AHL

- Anatomic Pathology – Guelph and Kemptville
- Bacteriology/Mycoplasmosis
- Clinical Pathology
- Immunology/Serology
- Molecular Biology
- Parasitology
- Toxicology/Soil & Nutrient
- Virology
- Surveillance

Within a comprehensive quality management system.
AHL expertise

- diagnosis, monitoring, emergency preparedness
- 18 veterinarians on staff, all with advanced training in various disciplines
Scanning surveillance objectives:

- **Detect hazards quickly**
  - Endemic disease, plus new and emerging disease agents

- **Prove freedom from disease**
  - Production limiting diseases
  - Export markets

- **Lead to follow-up investigations**
  - PEDV, *Brachyspira*, melamine, lead, ....
AHL function and structure

Client service

Laboratory testing

Quality program

AHL accreditations, registrations

1. **ISO/IEC 17025** General Requirements for the Competence of Testing and Calibration Laboratories
   - auditors – SCC, CALA
   - LSD - ~150 individual tests
     - AHL – SCC flexible scope

2. **AAVLD** Requirements for an Accredited Veterinary Medical Diagnostic Laboratory, v 6.0
   - auditor – AAVLD
   - 5yrs, all species, full-service

3. **Various** – CFIA for EIAV ELISA, etc.
Partnerships, affiliations

- CFIA led:
  - TSE Laboratory Network
  - Avian Influenza Laboratory Network
  - Canadian Animal Health Surveillance Network (CAHSN)
  - Network of Networks – “One Health”
    - animal health, public health, food safety labs
- AAVLD accredited lab:
  - 43 in N. America, 3 in Canada (ON, BC, QC)

CAHSN/CAHLN

- Canadian Animal Health Surveillance Network (CAHSN)/Canadian Animal Health Laboratory Network (CAHLN)
  - CAHSN = Federal – provincial – university partnership
  - CFIA – NCFAD led
  - Federal/provincial/university laboratories
- Standardization provided through:
  - standardized SOPs, upgraded quality programs
  - standardized reagents, proficiency panels
  - initial set of high priority agents – AIV, ENDV, CSFV, FMDV, BSE prion
  - compatible equipment for real-time PCR and ELISA
  - training of certified analysts
  - new or upgraded facilities – CL3, FAD (CL2+)
  - IT links in place for secure electronic messaging
- Safeguard animal health through:
  - routine surveillance capability
  - early detection, with confirmation by central reference lab
  - surge capacity
    - rapid response
    - appropriate recovery
Beef Foreign Animal Disease Workshop Summary

Canadian Animal Health Surveillance Network (CAHSN)

CAHSN legend:
- Partner Laboratories
- CFIA Laboratories

AHL - OMAFRA - CFIA - MOHLTC Animal Health Incident Reporting Protocol

- If you suspect a CFIA reportable disease, or have a reportable disease as a plausible source:
  - Report your suspicion to the CFIA District Office – phone number below via theonline after-hours.
  - Determine appropriate sample(s) for CFIA for availability in lab testing.
  - Choice of treatments:
    - High risk: Use when there is a severe concern for the presence of a PAF
    - Confirmatory negative: Use to rule out on PAF in differential diagnosis

- Immediately notify the following:
  - AHL (For disease diagnosis and control, immediate action is required)
  - OMAFRA (For animal health incident reporting)
  - CFIA (For detection, identification, and control of reportable animal disease)

- As appropriate, forward note on incident report to local, regional or national CFIA reportable disease

- Contact MOHLTC for online and phone Colorado animal disease support service.

Animal Health Laboratory (AHL)
Laboratory Services Division, University of Guelph Telephone 519-824-4125, ext. 2641
Fax 519-824-6010
Dr. Grant Moore, ext. 26444, call 519-824-3461
omhsa@uoguelph.ca
Dr. Beverley McEwen, ext. 51237
nmcewen@uoguelph.ca
Dr. Andrea Broede, ext. 66635, or 519-358-8300
abroede@uoguelph.ca

For any of the OMAFRA immediately notifiable diseases:
Office of the Chief Veterinarian for Ontario (OCVO)
OMAFRA, Animal Health and Wildlife Branch
Dr. Greg Douglas, Director of OCVO
Tel: 519-824-5679, Cell: 519-956-3572, Fax: 519-824-4975
OCVO notifiable@Ontario.ca – Division of OMAFRA veterinary

For CFIA reportable and CFIA immediately notifiable diseases:
Canadian Food Inspection Agency (CFIA)
Director, Veterinary, Guelph - Dr. Charanjit Takhar, Main Office 226 217-1230, fax: 226-217-1153, call 226-570-3678
Charanjit.Takhar@cfia.gc.ca

Veterinary, Brantford - Dr. Susan Hourne, phone 519-542-5902, Susan.Hourne@compnetwork.ca
Veterinary, Ottawa - Dr. Tony Whyte, phone 613-775-8606, Tony.Whyte@compnetwork.ca
Veterinary, Toronto - Dr. Robert Birdgum, phone 416-557-2507, Cell: 416-997-5905, Robert.Birdgum@compnetwork.ca

Note: For outbreaks or incidents that involve animals at a meat-packing plant (if immediately notifiable), please use the CFIA PAF hotline number that is monitored 24/7 1-877-814-2342

- reportable & immediately notifiable disease
  - other notifiable risk
  - PH risk

November 2014
AHL caseload distribution

2008 – 2013, AHL, annual average:
- ~66,300 cases
- ~818,000 procedures
- ~1,000,000 tests

Challenges in dealing with an FAD outbreak
ELISA automation system

- CRS Catalyst Express robotic arm
- PlateMate 2X3 96-channel liquid handler
- MultiDrop Combi reagent dispenser
- Luminex 200 reader
- BioTek ELx405 RSM microplate washer
- SpectraMax 340 PC microplate reader

- ~1,000 ELISA results/day; >200,000/year

AHL molecular labs

NA extraction | Clean room | Master mix

Thermocyclers | GS Jr sequencer
After 30 cycles, 1 billion copies generated – so avoid contamination!

High-throughput equipment
AHL Emergency preparedness

- Quality program, training, documentation, audited
- Facilities at Guelph and Kemptville
- In-house expertise and equipment
  - use CFIA FAD SOPs
- External linkages – CFIA, OMAFRA, veterinary organizations
  - email/PDFs, fax, phone
- Annual postmortem room simulations
  - plus 100 submissions per year to CFIA for confirmatory testing
    - rabies virus, FMDV, CSFV, avian influenza, anthrax, ........
  - routine BSE and CWD surveillance
  - new or emerging agents, e.g. Cache Valley virus, Schmallenberg virus
What is the Potential Economic Impact of FMD Outbreak in Canada?

Ken Poon¹, Alexander Cairns,¹ Stephen Duff,² Alan Ker,¹ Tor Tolhurst¹

¹University of Guelph
Department of Food, Agricultural and Resource Economics
Institute for the Advanced Study of Food and Agricultural Policy

²Ontario Ministry of Agriculture and Food and Rural Affairs

Beef Animal Foreign Disease Workshop
November 19, 2014

What is the Institute?

- Part of...
  - Dept. of Food, Agricultural and Resource Economics
  - Ontario Agricultural College (OAC)
  - University of Guelph
- Established 2012
- Mission: to provide independent, credible and timely policy analysis with respect to socially significant food and agricultural issues
- Other activities: policy conference (Ottawa in January), outreach and extension
The Ontario Beef Sector Model

- Simulate market mechanics for the Ontario beef market, using hard data and industry knowledge
- Goal: predict the distribution of cost to the industry in reaction to changes in policy, market conditions, and disease scenarios
- Compare “business as usual” to “what if” scenarios
  - in this case, FMD outbreak in Canada

Scenario Building Approach
Collaborative and Iterative

- Structure of the sector
- Relevant questions
- Economic intuition
- Structure of the sector
- Relevant questions
- Economic intuition
- FMD-specific knowledge
- Potential response from Canada and trade partners

Data
Model Structure

Past Lessons

- FMD outbreak in UK - 2001\(^1\)
  - Border closure to live animal & meat product exports
  - Major herd cull - 7 million animals
  - Estimated impact of $4.8 billion\(^2\) in losses to agriculture, food industry, and the public sector
- FMD outbreak in UK - 2007
  - Border closure to live animal & product exports
  - Quick response ⇒ fast containment and few animals culled

\(^1\) Thompson et al, 2002
\(^2\) USD$
What happens in the event of a domestic FMD outbreak?

- Risk-based culling, depending of risk of spreading infection
- Immediate restriction of animal movement out of province with case of FMD
  - Infection Zone (no in or out, 3k radius of infected case)
  - Monitoring Zone (5k radius of infected case)
  - Primary Control Zone (Province and/or country with FMD)
- Border closure for ALL exports of live cattle and processed meat

FMD Scenarios

Two Scenarios of Interest

A

Outbreak in Western Canada
- All live cattle movement restricted
- No imports of processed beef from W. Canada
- No exports of processed beef to the U.S.

B

Outbreak in Bruce & Huron counties
- All live cattle movement restricted
- No out-of-province sale of Ontario processed beef
- No exports of processed beef to the U.S.
- 10% of counties’ beef cattle culled (~9.4k head)
- Restricted movement of cattle within affected counties

Focus: economic impact on beef industry over the first year

---

resulting in a 25% ↓ in prov. feeder movement
Scenario A

FMD Outbreak in Western Canada

- All live cattle movement restricted
- No imports of processed beef from W. Canada
- No exports of processed beef to the U.S.

Scenario A
Results for Live Cattle

Restricting animal movement from Western Canada into Ontario impact all points on supply chain

<table>
<thead>
<tr>
<th></th>
<th>Heifer</th>
<th>Steer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Δ%P</td>
<td>ΔQ</td>
</tr>
<tr>
<td>Cow-Calf</td>
<td>+3.1%</td>
<td>No Δ</td>
</tr>
<tr>
<td>Backgrounding</td>
<td>+4.2%</td>
<td>−24.6%</td>
</tr>
<tr>
<td>Finishing</td>
<td>+5.5%</td>
<td>No Δ</td>
</tr>
</tbody>
</table>

Calves, feeders and fed cattle all become relatively scarce

- **Prices increase**
- Supply decreases
Scenario A
Results for Live Cattle

Non-fed cattle can no longer be shipped to the US for slaughter:

<table>
<thead>
<tr>
<th></th>
<th>Non-fed Cows</th>
<th>Non-fed Bulls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culled (Non-Fed)</td>
<td>-16.8%</td>
<td>-17.6%</td>
</tr>
<tr>
<td></td>
<td>-16.9%</td>
<td>-9.2%</td>
</tr>
</tbody>
</table>

Surplus of non-fed cattle in Ontario

- Prices decrease
- Supply decreases and inventories increase

Scenario A
Results for Processed Beef

Market for processed beef

- Consumers see no changes
  - Retailers can bring in beef from U.S., so retail prices don’t change

- Supply of beef processed in Ontario ↓ 2.78% (equivalent to $96M in retail sales)

- Could be worse: loss in exports partially offset (roughly 2/3) by shipment of processed beef to elsewhere in Canada

November 2014
Beef Foreign Animal Disease Workshop Summary

Big Picture
Scenario A

<table>
<thead>
<tr>
<th></th>
<th>Cow-Calf</th>
<th>Background</th>
<th>Finishing</th>
<th>Non-Fed</th>
<th>Processed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ $</td>
<td>$0.09M</td>
<td>−$67.2M</td>
<td>−$3.8M</td>
<td>−$4.6M</td>
<td>−$200.3M</td>
<td>−$275.8M</td>
</tr>
<tr>
<td>Δ %</td>
<td>0.3%</td>
<td>−83.4%</td>
<td>−1.9%</td>
<td>−22.1%</td>
<td>−3.7%</td>
<td>−4.8%</td>
</tr>
</tbody>
</table>

Note: values are the change in economic welfare (total consumer and producer surplus, proxy for profit).

- Cow-calf sector realizes small economic gain (due to higher prices), but all other sectors experience losses
- Backgrounding hit hard because live feeders cannot be imported from Western Canada
- Processing sector bears the majority of the cost of FMD outbreak in Western Canada

Overall economic loss of over $275M

Scenario B

FMD Outbreak in Bruce & Huron counties

- All live cattle movement restricted
- No out-of-province sale of Ontario processed beef
- No exports of processed beef to the U.S.
- 10% of counties' beef cattle culled (~9.4k head)
- Restricted movement of cattle within affected counties

---

4 resulting in a 25% ↓ in prov. feeder movement

November 2014
## Scenario B

**Results for Live Cattle**

<table>
<thead>
<tr>
<th></th>
<th>Heifer</th>
<th></th>
<th>Steer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Δ%P</td>
<td>ΔQ</td>
<td>Δ%P</td>
<td>ΔQ</td>
</tr>
<tr>
<td>Cow-Calf</td>
<td>+3.4%</td>
<td>−0.4%</td>
<td>+1.5%</td>
<td>−0.4%</td>
</tr>
<tr>
<td>Backgrounding</td>
<td>+4.6%</td>
<td>−24.1%</td>
<td>+1.8%</td>
<td>−17.8%</td>
</tr>
<tr>
<td>Finishing</td>
<td>+6.0%</td>
<td>−1.1%</td>
<td>−0.1%</td>
<td>−1.1%</td>
</tr>
</tbody>
</table>

Stomp out and restriction of feeder cattle movement into Bruce & Huron counties increases scarcity of calves, feeders and fed cattle:

- **Prices increase**
- **Supply decreases**

## Scenario B

**Results for Live Cattle**

Non-fed cattle can no longer be shipped to the U.S. for slaughter:

<table>
<thead>
<tr>
<th></th>
<th>Non-fed Cows</th>
<th>Non-fed Bulls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Δ%P</td>
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</tr>
<tr>
<td>Culled (Non-Fed)</td>
<td>−17.4%</td>
<td>−16.1%</td>
</tr>
</tbody>
</table>

Surplus of non-fed cattle in Ontario:

- **Prices decrease**
- **Supply decreases and inventories increase**
Scenario B
Results for Processed Beef

Market for processed beef

- Again, consumers see no changes because
  - Processed beef comes in from U.S. and Western Canada to meet Ontario demand
  - Supply of beef processed in Ontario ↓ 3.5%
    (equivalent to $119M in retail sales lost)

Big Picture
Scenario B

<table>
<thead>
<tr>
<th></th>
<th>Cow-Calf</th>
<th>Background</th>
<th>Finishing</th>
<th>Non-Fed</th>
<th>Processed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ $</td>
<td>−$.03M</td>
<td>−$67.1M</td>
<td>−$5.6M</td>
<td>−$4.7M</td>
<td>−$786.9M</td>
<td>−$864.4M</td>
</tr>
<tr>
<td>Δ %</td>
<td>−0.1%</td>
<td>−83.3%</td>
<td>−2.8%</td>
<td>−22.6%</td>
<td>−14.5%</td>
<td>−15.0%</td>
</tr>
</tbody>
</table>

Note: values are the change in economic welfare (total consumer and producer surplus, proxy for profit)

- All sectors experience losses (and are worse off than in Scenario A)
- Again, backgrounding and non-fed sectors are hit hard because of restrictions on live cattle movement
- Processing sector bears the majority of the cost of FMD outbreak in Bruce & Huron counties – but magnitude of loss increases almost fourfold

Overall economic loss of over $864M
Take Home Message

- FMD outbreak in Canada will have large economic costs to the Ontario Beef Industry...
  - At all points on the supply chain
  - Even if it happens in Western Canada
- Restriction of live cattle movement will be the major factor
“Lessons Learned from FMD Outbreaks in the U.K. and South Korea”, Dr. Robyn Budgeon, Canadian Food Inspection Agency

Foot and Mouth Disease

- FMD – most concerning of the foreign animal diseases we don’t want in Canada
- WHY?
  - Significant implications for international trade
  - Affects multiple species - domestic and wildlife
  - Highly contagious
Geographical Distribution

First disease that OIE established an official list of free countries and zones


Basically North and Central America, Europe, Australia, New Zealand are FMD free
Foot and Mouth Disease
UK 2001

Largest FMD outbreak the world has ever experienced

10,347 Infected premises, 4 million animals culled

Direct and indirect costs to economy – 3 billion British pounds cost to taxpayers

Export markets closed from Feb 2011 - Oct 2011

What went wrong FMD UK 2001

• Delay in initial reporting

• Veterinary Authorities did not understand the scale of animal movement

• Disease disseminated widely and well established before implementation of movement and other disease control measures
What went wrong FMD UK 2001

Key problem in this epidemic

Delayed prohibition on animal movement

What went wrong – early stages
FMD UK 2001

Scale of epidemic rapidly overwhelmed existing veterinary authority resources

Early delays in confirmation and diagnosis of disease, tracing, slaughter and disposal

Disposal method of burning on pyres was distressing to everyone

No early engagement of key stakeholders - farmers!
Lessons Learned

Effective Control Strategy:

- Slaughter of infected herds within 24 hours
- Slaughter of susceptible animals on neighbouring farms within 48 hours
- Slaughter of all sheep and pigs within 3 km of infected premises in heavily infected areas.
- Rapid slaughter of dangerous contacts
- Vaccination not considered early.
Lessons Learned FMD UK 2001

Better contingency planning
Rapid and decisive intervention in response to the outbreak
IMMEDIATE ban on livestock movement
Rapid slaughter of livestock on infected premises
Target high risk premises in the neighbourhood not just slaughter of contiguous premises
If vaccination is to be used, implement this quickly
Effective import controls (smuggled meat)
More information and training on biosecurity measures
Electronic ID systems ensuring traceability
FMD Japan 2010- First outbreak in a decade

- Outbreak began March 2010- ended July 2010
- Source suspected to be a water buffalo farm 600 metres from first case.
- 292 premises involved, 290,000 animals killed
- Serious losses to the livestock industry in the affected region
- Costs to tourism: $1.11 billion US

What caused the rapid spread?
Japan FMD 2010

- Introduced into high density area of cattle and pigs
- Delay in initial recognition (thought it was swine vesicular disease)
- High density area created difficulty in finding suitable burial sites.
- However was eliminated in three months
Japan 2010 - Disposal

What caused the rapid spread?
Japan FMD 2010

Outbreak in a second area caused by a truck carrying animals before movement restrictions were applied

When disease discovered in pigs, rapid increase in number of infected premises caused delay in eradication procedures

Movement restrictions and stamping out procedures were insufficient for control in the densely populated areas
Control Strategy

Eradication not preventing the spread

Changed the strategy to stamping out and emergency vaccination

Lessons Learned Japan FMD 2010

• Early recognition of disease
• Prompt culling of infected animals
• Early movement controls
• Early decision to use emergency vaccination
• Well organized emergency protocols by animal health authorities and associated industries necessary
South Korea FMD Nov 2010- Feb 2011

- Largest in Korean history
- 153 farms - 3.4 million animals were culled, including cattle, pigs, goats, sheep and deer
- Cost about 2.7 billion $ US
- 75 farms infected by time 1st index case confirmed.

What did FMD spread so quickly? Korea FMD 2010-2011

- Index case was a pig farming complex- source suspected to be overseas travel of owner, or smuggling of animal products by foreign workers at the farm.

FMD virus spread from farm to farm through routine movements associated with animal husbandry operations

Human behaviours were the major factors in the spread of the disease in this epidemic
Why did FMD spread so quickly
Korea 2010-2011

- Spread by routine movements associated with animal husbandry operations
- Major sources of contamination – percent of total cases:
  - Visitors – 69 % of cases
  - (including artificial inseminators, veterinarians, animal carrying vehicles, etc.)
  - Farm owners- 15% of cases
  - Delivered materials

Why has quarantine zone collapsed and FMD spread so quickly?

- Cold weather made disinfectants ineffective because they freeze up antiseptic solutions.
FMD Korea 2010-2011

- Initially used stamping out policy, disinfection and quarantines
- Pre emptive culling within 3 km
- All animal movement within 10 km prohibited.

- Employed a vaccinate to live strategy starting in Jan 2011
- Modified stamping out policy to infected premises and high risk contacts

November 2014
Korea FMD 2010-2011

Lessons Learned - Themes

Spread Control

- Effective contingency plans by both farmers and government

- Effective biocontainment procedures for routine animal husbandry operations

- Effective on-farm biosecurity for owners, visitors and farm workers
Lessons Learned - Themes

Source control
Public education and import controls
- sources were contaminated smuggled products

Spread control
- Early detection
- Early movement prohibitions
- Early eradication of infected animals and high risk contacts
- Early decision to use vaccination

Canada FMD - 1952 Saskatchewan
5. Questions for Consideration Following Tabletop Simulation

Beef Foreign Animal Disease Workshop

QUESTIONS FOR DISCUSSION AND FUTURE CONSIDERATION

1. What parts of the response do you think your sector is well-prepared for?
2. What will be your biggest challenges during a response?
3. What deficiencies exist in training and information?
4. What resources would benefit you in preparation for an animal health emergency?
5. What do you anticipate could be the most challenging part of the recovery process?
6. The scenario does not provide details regarding the size of the affected farming operations, however, it is likely many animals will be euthanized. How and where will the carcasses be disposed? What equipment and human resources are required?
7. What long-term effects could this outbreak have on the Ontario livestock sector, related supply chain and service sectors, provincial economy, national trade?
8. What resources are available to help the broader agricultural sector recover from this event, both economically and mentally?
9. Do you think the livestock sector (in the broadest sense) could rebound from such an event and continue with "life as usual"?
10. Because Lipsandtoesis is highly contagious, it is possible this situation could have been much worse, affecting many more farms and counties. How would you handle a larger, more long-term animal health emergency?
11. What additional resources would you anticipate you would need?

Beef Foreign Animal Disease Workshop

Sponsored by
Animal Health Laboratory
Beef Farmers of Ontario
Ontario Livestock and Poultry Council
Ontario Ministry of Agriculture, Food and Rural Affairs

November 19, 2014
Guelph, Ontario
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<td>5</td>
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<td>Consequences of Inaction</td>
<td>8</td>
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<td>9</td>
</tr>
<tr>
<td>SMART Actions</td>
<td>9</td>
</tr>
<tr>
<td>Summary</td>
<td>13</td>
</tr>
</tbody>
</table>
Executive Summary

A broad range of stakeholders in the beef sector in Ontario met at the Springfield Golf and Country Club in Guelph on November 19, 2014 for a Beef Foreign Animal Disease Workshop. The event was sponsored by Ontario Livestock and Poultry Council, the Beef Farmers of Ontario and the Ontario Ministry of Agriculture, Food and Rural Affairs. The workshop featured six informative presentations relating to the topic, a Foreign Animal Disease scenario exercise. Bryan Boyle facilitated a highly interactive session designed to engage the participants to identify strengths and weaknesses in the beef sector’s Foreign Animal Disease (FAD) response, preparedness and identify actions to build on the strengths and reduce or eliminate the weaknesses or gaps.

When asked to identify the positive features or advantages of FAD emergency preparedness for the beef sector in Ontario, many merits emerged including strong collaboration, a proactive and prepared sector as well as technical systems and resources. The participants also identified some current negative features that could pose potential problems. Challenges of coordination, available resources and protocols were areas of common concern.

The participants noted the significance of their actions when they identified the consequences of inaction. The overriding theme was the broad impact on the beef sector and agriculture in Ontario characterized by financial impacts, response limitations and the effects on people and animals. Based on their desire to be proactive, the participants identified and prioritized their key target areas of potential action. There was an obvious proactive trend in the three highest priorities for action, namely, communication, training and education as well as stakeholder engagement. At slightly lower, yet significant, priority levels were financial resources, legislation and protocol research.

Through a facilitated discussion, participants identified actions to move toward strong and effective FAD emergency preparedness for the beef sector in Ontario. These actions were designed to be specific, measurable, achievable, realistic and timely. The complete details of all of these initiatives are included in the main body of this report. An example in each of the areas of focus includes:

Communication: In the event of an outbreak, set up an industry panel to act as a liaison between the Canadian Food Inspection Agency (CFIA), the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) and all other stakeholders, especially producers and the public.

Bryan Boyle & Associates
FACILITATING YOUR FUTURE

November 2014
Training and Education: Create a working group to develop training tools for a Foreign Animal Disease response by March 31, 2015.

Stakeholder Engagement: Encourage representatives of the Canadian Food Inspection Agency (CFIA), the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) to attend stakeholders’ meetings to provide information on Foreign Animal Disease.


Legislation and Protocols: Develop protocol for elevated biosecurity including how to carry out daily routines between different farm locations.

Research: Investigate genetic resistance to Foreign Animal Disease.

Bryan Boyle reminded the participants of an age-old adage: “If it is to be, it is up to me”. He suggested to the stakeholders in the room that they are all in a position to positively influence the future effectiveness of the response to a Foreign Animal Disease in the beef sector. As a result, the participants shared a wide range of their individual personal commitments.

The session was a productive one, where the participants were very engaged. Through their valued input, participants took an important step in their continued quest for strong and effective Foreign Animal Disease emergency preparedness for the beef sector in Ontario.
Ontario Livestock and Poultry Council
Beef Farmers of Ontario
Ontario Ministry of Agriculture, Food and Rural Affairs

Beef Foreign Animal Disease Workshop

Tamarack Room, Springfield Golf and Country Club, Guelph
November 19, 2014 Facilitated by Bryan Boyle

Purpose of the Session

To identify strengths and weaknesses in the beef sector’s Foreign Animal Disease (FAD) response preparedness and identify prioritized actions to build on the strengths and reduce or eliminate the weaknesses or gaps.

What? Observations

Participants outlined the current positive features or advantages that pop out at them when they think about FAD emergency preparedness in the Ontario beef sector, i.e. opportunities on which they can build.

(Items denoted by x # indicate this point was noted by multiple individuals or groups)

Collaboration
- We all want to work together
- Good communication between government and representatives of industry stakeholders
- Trust displayed between farmers, Canadian Food Inspection Agency (CFIA) and Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA)
- Good rapport in the industry
- Strong desire to engage and communicate
- We have learned from other industries, e.g. poultry and pork
- Beef farmers trust the Beef Farmers of Ontario organization
- Beef producers are active in this initiative
- Canadian Food Inspection Agency (CFIA) is on the Animal Health Emergency Response Team
- Feed industry people are involved in today’s workshop
Proactive and Prepared

- Our beef industry experience from bovine spongiform encephalopathy (BSE) (x3)
- Canadian Food Inspection Agency’s (CFIA’s) response is in place (x2)
- Increased awareness of biosecurity and the issues involved in Foreign Animal Disease (FAD)
- Canadian Food Inspection Agency (CFIA) role and potential actions are well-established and effective
- There is a strengthened emergency preparedness strategy from an industry perspective
- Inclusiveness
- Veterinarians are well educated on diseases
- Action Preparedness Plan

Technical Systems and Resources

- Canadian Food Inspection Agency (CFIA), Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Animal Health Lab (AHL) and Beef Farmers of Ontario (BFO) are readily available for contact
- We have the technology now to communicate rapidly
- Beef communication network
- Good access to social media
- Better and faster diagnostics and turnaround times
- Canadian Veterinarian Reserve (CVR) is in place
- Beef farmers’ locations may be more remote from the majority of the population, therefore posing a lower risk to introducing and spreading Foreign Animal Disease
- Radio Frequency Identification (RFID) tags would facilitate identification of animals during any Foreign Animal Disease (FAD) activities

Participants also identified the current negative features, i.e. things that could pose potential problems or challenges in the case of a FAD emergency affecting beef.

Coordination

- Unclear channels for communication
- Communication
- Inconsistent messaging
- Cross-sector relationships required
- Challenge to directly contact all producers
- Low awareness of disease symptoms
- Difficult to understand the industry needs during a Foreign Animal Disease outbreak
Available Resources
- Canadian Food Inspection Agency (CFIA), Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) have limited staff available
- Over-estimation of Canadian Food Inspection Agency's (CFIA's) capacity to respond
- Unknown costs, time and fiscal restraint

Protocols
- No traceability: Where are all the cattle? (x2)
- Biosecurity lacking
- Don't have a heightened biosecurity standard
- Although we've made a good start, there is more preparation needed
- Stagnation on certain items
- Effect on animal husbandry and welfare

Sector Realities
- Fragmented industry
- Many small farms
- Multiple locations for a single beef operation
- Larger farms with more animals lead to increased intensity and potential spreading of disease
- Small concentrated sector
- Off farm jobs by operators may challenge on-farm management
- Nature of industry
- Competition among segments of the industry, e.g., feed, veterinarians etc.
- Underestimating the overall effect on the industry
- Farmers are blissed about Foreign Animal Disease
- Fewer veterinarians, cost of vet calls and fewer veterinarians visiting farms routinely may influence early identification of disease
- More travel of animals and people
- Increased public scrutiny
What? Reflections

Participants identified the consequences of continuing along the current path and using the same strategies without taking innovative or proactive approaches to FAD emergency preparedness within the beef sector.

Economic Impact
- Export markets lost (x5)
- Economic cost could be astronomical (x4)
- Economic disaster in the industry and in the broader economy
- Personal net worth of producers greatly reduced
- Devaluation of livestock and farms
- Global trade curtailed
- Longer window to reopen trade
- Initial chaotic response
- Severe impact on our processors
- Hurts tourism
- Decreased domestic food supply
- Destruction of many non-diseased animals
- Time and cost required to rebuild herds

Uncoordinated Response
- Strain on the relationships between Canadian Food Inspection Agency (CFIA) and all other stakeholders in industry
- Lack of training for the next generation of responders
- Foreign Animal Disease becomes our reality
- Generally not prepared for Foreign Animal Disease
- Not if we get a Foreign Animal Disease (FAD) but when we get an FAD
- Irresponsible reaction
- Massive disease outbreak with high mortality and culling
- To limit the damage, we must plan ahead

Loss of Confidence and Support
- Loss of consumer confidence (x3)
- Global confidence in the Canadian animal health system is reduced
- World Organization for Animal Health (OIE) perception of Canada would be damaged

Bryan Boyle & Associates
Facilitating Your Future

November 2014
Sector Realities

- Huge emotional toll on stakeholders (x2)
- Emotional and mental stress are much higher when we are not prepared
- Social costs
- Who is going to start over?
- Animal welfare

Now What? Actions

Several potential “Key Areas of Focus” for the future of FAD emergency preparedness within the beef sector were suggested, confirmed and prioritized by participants.

Prioritizing
Each participant was given 100 “beef points” to allocate to these areas of focus that they identified or confirmed. On the ballot beside each number they indicated the number of points that they would give each area of focus (must be between 0 and 40 in multiples of 5).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Key Area of Focus</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Communications</td>
<td>94.5</td>
</tr>
<tr>
<td>2nd</td>
<td>Training and Education</td>
<td>81.0</td>
</tr>
<tr>
<td>3rd</td>
<td>Stakeholder Engagement</td>
<td>79.0</td>
</tr>
<tr>
<td>4th</td>
<td>Financial Resources</td>
<td>58.0</td>
</tr>
<tr>
<td>5th</td>
<td>Legislation and Protocols</td>
<td>40.5</td>
</tr>
<tr>
<td>6th</td>
<td>Research</td>
<td>35.5</td>
</tr>
</tbody>
</table>

What SMART (Specific, Measurable, Achievable, Realistic and Timely) steps will help move toward a strong and effective FAD emergency preparedness for beef in Ontario?

These were designed to build on their strengths, reduce or eliminate their challenges and avoid the consequences of inaction.

A. Communications

A.1. Identify information hub participants

A.2. Develop specific social media accounts, e.g. @511

A.3. Invoke mandatory premise identification
A.4 Develop communication lists and communication trees

A.5 Include Foreign Animal Disease education as part of meetings convened for other purposes

A.6 Provide flashcards for biosecurity on every farm

A.7 In the event of an outbreak, set up an industry panel to act as a liaison between the Canadian Food Inspection Agency (CFIA), the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) and all other stakeholders, especially producers and the public. This could speed up availability of answers.

A.8 Achieve a commitment from the Canadian Food Inspection Agency (CFIA) for them to develop web specific Foreign Animal Disease materials during the 2015-2016 year.

A.9 Work to standardize the format and information flow across groups

A.10 Meet with community leaders, e.g. church elders, to reach the Mennonite community

A.11 Hold town hall meetings to address the lack of awareness of Foreign Animal Disease issues

A.12 Develop a master list of stakeholders and organizations to be utilized if needed in any Foreign Animal Disease activity

A.13 Develop a social media strategy involving Facebook, Twitter and e-mails

B. Training and Education

B.1 Provide a permit exercise for suppliers, truckers and producers by March 31, 2015

B.2 Create a working group to develop training tools for a Foreign Animal Disease response by March 31, 2015

B.3 Develop producer specific “frequently asked questions” (FAQ’s) for the Beef Farmers of Ontario website by March 31, 2015

B.4 Inform the public about eradication measures, e.g. culls, vaccination, etc.

B.5 Inform the public of the risks of importing animal products, e.g. at airports

B.6 Educate producers on their rights and responsibilities and the benefits to their sector for any action related to Foreign Animal Disease
B.7 Organize on-farm producer meetings to highlight biosecurity measures

B.8 Review on-farm biosecurity status and potential improvements

B.9 Develop producer newsletter articles to recognize clinical signs of foot and mouth disease

B.10 Create and offer some practical articles on Foreign Animal Disease response for the Canadian Veterinary Journal

B.11 Provide training on proper donning and doffing of clothing for veterinarians

C. Stakeholder Engagement

C.1 Convene a workshop with a format like today’s at least annually to practice or complete an exercise together (X3)

C.2 Encourage representatives of the Canadian Food Inspection Agency (CFIA), the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to attend stakeholders’ meetings to provide information on Foreign Animal Disease

C.3 Assure there are communication links in producer magazines relating to Foreign Animal Disease

C.4 District offices of Canadian Food Inspection Agency (CFIA) would provide an e-mail blast relating to Foreign Animal Disease to veterinarians in their district

C.5 Provide workshops and other opportunities for stakeholders’ simulations relating to Foreign Animal Disease

C.6 Farmers should encourage their suppliers to be ready for Foreign Animal Disease and practice strong biosecurity

C.7 Develop strategies to allow us to contact all of our members, so this could be possible in the case of a Foreign Animal Disease incident

D. Financial Resources

D.1 Create funds for lost income and emergency communication

D.2 Solicit funding to develop emergency response plan through Growing Forward 2 (GF2)
D.3 Encourage and finance research for prevention vaccines

D.4 Provide compensation for cleaning and disinfecting and labour costs

D.5 Initiate a pre-compensation report, guarding producers from losses

D.6 Canadian Food Inspection Agency (CFIA) could secure euthanasia equipment for stakeholder use during the time of an Foreign Animal Disease incident

D.7 Consider a Foreign Animal Disease Insurance Plan funded through producer check-off by December 31, 2015

D.8 Leverage funds from a variety of sources to improve training and support for biosecurity by July 31, 2015

E. Legislation and Protocols

E.1 Develop an understanding of stakeholders’ rights and responsibilities immediately. Stakeholders need to be made more aware of legislation and their roles within it.

E.2 Legislature mandatory premise identification and livestock movement records

E.3 Develop protocol for elevated biosecurity including how to carry out daily routines between different farm locations

E.4 Operationalize current legislation and protocols

E.5 Work to close the gap between producers and government in the area of protocols

E.6 Assure a clear protocol when handling and Foreign Animal Disease outbreak

E.7 Identify or create protocols relating to mass vaccination, mass euthanasia and the mass disposal. Include do's and don'ts being as specific as possible

F. Research

F.1 Commission more extensive research on effectiveness of mass vaccination (x3)

F.2 Assess producer and veterinarian awareness on recognizing and responding to Foreign Animal Diseases through surveys or other means
F.3 Initiate field research tests on Polymerase Chain Reaction (PCR) which is a powerful and sensitive technique for DNA amplification

F.4 Provide more support for on-farm surveillance

F.5 Develop a “snap test”

F.6 Research alternate delivery systems for vaccine, e.g., in feed

F.7 Identify how to humanely euthanize both in terms of physical equipment and logistics

F.8 Identify and evaluate other forms of eradication

F.9 Commission specific research on mass current carcass disposal

F.10 Investigate genetic resistance to Foreign Animal Disease

F.11 Assess wildlife transmission potential of Foreign Animal Disease

F.12 Identify Best Management Practices (BMP) to reduce incidence and impact of Foreign Animal Disease

**Personal Commitments: “If it is to be, it is up to me!”**

Bryan Boyle reminded the participants of an age-old adage: “If it is to be, it is up to me”. He suggested to the stakeholders in the room that they are all in a position to positively influence the future effectiveness of the response to a Foreign Animal Disease in the beef sector. As a result, the following individual personal commitments were shared by participants:

I will…
- understand the on-farm and zona movement aspects of a Foreign Animal Disease response, so it can be properly communicated to producers from a producer
- communicate to the grassroots the knowledge that I have learned today
- remind and educate producers about biosecurity
- improve on-farm biosecurity
- write a magazine article for producers on Foreign Animal Disease
- do a better job of biosecurity on my farm
- communicate to producers in my community the discussion we have had today
- encourage extension through producer and veterinary meetings on Foreign Animal Disease
- increase producer education
- create a biosecurity newsletter for producers
• review my producers’ on-farm biosecurity
• coordinate on farm biosecurity training for producers
• promote biosecurity on beef farms
• communicate the value of biosecurity and review current Standard Operating Procedures (SOPs) to ensure that Atwood Resources Inc. (ARI) is doing its part as we service our clients
• increase efforts for Foreign Animal Disease training and education
• revise and update Beef Farmers of Ontario’s communication situation response plan help assure our Association plan is in place
• include biosecurity quick notes in BCOP workshops
• help plan an exercise involving local veterinarians and CFIA district office staff
• provide information on diseases and policies
• continue to play a key role in developing realistic plans that can be implemented to humanely depopulate animals and dispose of dead stock in an environmentally sound proper manner
• work with my organization to promote information sharing
• build personal relationships and trust with producers, during peacetime
• mentor the next generation of CFIA responders
• continue to lobby for the development of an information website that is permit and condition ready
• get in touch with producer groups and offer to attend and present at a meeting
• continue to share my expertise and experience with industry
• continue to engage with Beef Farmers of Ontario on costing out disease scenarios
• help communicate CFIA’s “frequently asked questions” to Beef Farmer of Ontario membership
• complete the Ontario Animal Health Network Bovine Expert Network
• work with the beef industry to increase uptake

The session was a productive one, where the participants were very engaged. Through their valued input, participants took an important step in their continued quest for strong and effective FAD emergency preparedness for the beef sector in Ontario.
Below is a summary of the feedback from the workshop held on November 19, 2014. There were 31 feedback sheets returned from a possible 52. That equates to a 60% response rate.

1. “Principles of Disease Spread and Control” – Tim Pasma
   
   Poor - 0   Fair - 1   Good - 13   Very Good - 11   Excellent - 4
   - Basic and easy to understand

2. “How will CFIA Respond to a Disease Outbreak?” – Robyn Budgeon
   
   Poor- 0   Fair – 0   Good - 9   Very Good - 15   Excellent - 4

3. “What is OMAFRA’s Emergency Response to a FAD?” – Cathy Furness
   
   Poor - 0   Fair - 1   Good - 7   Very Good - 17   Excellent - 4
   - Liked ICS charts

4. “What is the Animal Health Laboratory’s Role?” – Grant Maxie
   
   Poor - 1   Fair - 1   Good - 7   Very Good - 16   Excellent - 6

5. “What is the Potential Economic Impact?” – Kenneth Poon
   
   Poor - 1   Fair - 6   Good - 14   Very Good - 9   Excellent - 1
   - Questionable?
   - Went too quickly through numbers
   - We need more of this kind of thing – economics – affected animal species, susceptible animal species

6. “Lessons learned from FMD Outbreaks in the U.K. and South Korea” – Robyn Budgeon
   
   Poor - 0   Fair - 0   Good - 4   Very Good - 17   Excellent - 9
   - Very interesting

7. “Foreign Animal Disease Scenario” – Cathy Furness and Susan Fitzgerald
   
   Poor - 0   Fair - 0   Good - 4   Very Good - 18   Excellent - 8
   - Well organized
8. “Facilitated Session on FAD Response Preparedness” – Bryan Boyle

Poor - 0    Fair - 0    Good - 10    Very Good - 13    Excellent - 6

9. How beneficial did you find the overall session in raising your awareness to livestock disease emergency preparedness and response?

Poor - 0    Fair - 0    Good - 8    Very Good - 18    Excellent - 5
- Thanks! Encouraging thought in peace-time, will take this back to producers

10. How effective was the program in assisting you to develop a better understanding of what CFIA, OMAFRA and the AHL will do if there is a FAD in Ontario and also what is expected/needed from the beef industry?

Poor - 0    Fair - 0    Good - 6    Very Good - 20    Excellent - 5

11. Is there something you heard or learned at the workshop, either from the presentations or in discussion with other attendees, that you would consider implementing on your farm or in your business activities?

Yes - 12    No - 3

If yes, please specify
- Better biosecurity measures
- Biosecurity producer meeting – website/information development – make links
- Importance of preparedness during peace-time
- Review current procedures to see how we can be more bio secure
- Tweet and write more about FAD issues
- More effective biosecurity
- Educating producers – remind them of importance of biosecurity
- FAQs development for BFO activities and next steps re: creation of emergency management plan for Ontario beef
- Better biosecurity
- Proper on farm biosecurity plan
- Communication and emergency preparedness
- Beef industry is hungry for information on what would happen in a response
- Attending producer meetings and providing them with info and presentation
- BFO staff. We learned that there is a lot of work to do

12. A workshop report will be produced which will contain copies of the presentations as well as a summary of the input from the facilitated discussion. In which format would you prefer to receive a report?

Hard Copy – 1
Electronic Copy – 26
I would not refer to a report – 2
13. What additional information, if any, would you have found valuable in this workshop?

- More discussion time
- It was a very well organized workshop. Good communication between all parties. It’s good to engage with all stakeholders etc.
- Firsthand experience of challenges IN an outbreak
- Firsthand explanation/awareness of current business practices that represent a potential liability
- These workshops are very important. Failing to plan is planning to fail
- Perhaps a handout – outlining what in general CFIA and OMAFRA would do
- A short (15 minute) presentation from feather board command centre – how it works, how it was formed/funded and what it sees as its role, CFIA sees as its role, and OMAFRA sees as its role
- Meeting producers