Foot and Mouth Disease Continuity of Business Planning for the U.S. Dairy Industry

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U.S. Foreign Animal Disease Response Planning is Moving in a New Direction

U.S. Secure Food Supply (SFS) Plans are underway!

All aboard!
Why Secure Food Supply (SFS) Plans?

Size, structure, efficiency, extensive movement inherent in North American livestock industries will present *unprecedented challenges* in an FAD outbreak.
Goal of SFS Plans: Business Continuity for U.S. Agriculture

- Minimize unintended negative effects of disease and disease response, while achieving response goals
  - Control or eradicate disease without “destroying” the industry
Common Components of Secure Food Supply Plans

- **Voluntary** pre-outbreak preparedness components
- **Biosecurity**, surveillance, epidemiology questionnaires, movement permits
- **Proactive risk assessments** (completed and in-process)
- Plans must be based on **current capabilities** and will evolve with science, risk assessments and new capabilities
- **Guidelines only**: Final decisions made by responsible officials during outbreak
- Outreach and training pre- and post-outbreak
Secure Food Supply Plans under development

- Secure Milk Supply
  - Foot and Mouth Disease (FMD)
  - Movement of milk
- Secure Pork Supply
  - FMD, Classical Swine Fever, African Swine Fever, and Swine Vesicular Disease
  - Movement of animals
- Secure Beef Supply
  - FMD
  - Movement of animals
- Secure Egg Supply
  - High Path Avian Influenza (HPAI)
  - Eggs and egg products
- Secure Turkey Supply
  - HPAI
  - Movement of birds
- Secure Broiler Supply
  - HPAI
  - Movement of birds, hatching chicks and eggs
U.S. FMD response is based on USDA VS guidance

• Rapid control and eradication still the goal, but...
  – Animal/product movements from concentrated dairy, beef and swine sectors present a huge challenge
  – Mass depopulation unlikely - inadequate resources/political will
  – May take months/years to gain freedom from the disease

• Recent policy enhancements
  – **Continuity of business planning**
  – **Early consideration of vaccination**
Modern U.S. FMD response plans must be scalable to different size outbreaks

FMD response and management strategies:

- Depend upon the magnitude, location, other characteristics of the outbreak
  – “Types”
- Depend on the stage
  – “Phase”
There are many tools for the control of FMD

- **Biosecurity**
- Quarantine and Managed Movement
- Stamping Out
  - Slaughter of all clinically affected and in-contact susceptible animals (within 24 hours or as soon as possible)
- Trace back/Trace forward
  - 2 incubation periods prior to outbreak (OIE incubation period for FMD is 14 days)
- Rapid Diagnostics
- Vaccination
  - Vaccinate to kill/slaughter/live
If we get FMD, we likely will be dealing with it for a long time ...
The U.S. National Secure Milk Supply Plan
What is the Secure Milk Supply Plan?

• U.S. Dairy Industry Continuity of Business Planning for FMD

• Initial Goal
  – To maintain milk movement in a Foot-and-Mouth Disease (FMD) outbreak and to provide a continuous supply of wholesome milk and milk products for consumers

• Public-Private Partnership
  – Industry, State, Federal, Academia

• Voluntary
The dairy industry (producer and processor) business flow is complex.
The SMS must accommodate the diversity of the US dairy industry

<table>
<thead>
<tr>
<th>State</th>
<th>Total Milk (million lbs)</th>
<th>Milk Cows (1,000)</th>
<th># Farms</th>
<th>% US Milk Production</th>
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<tr>
<td>California</td>
<td>41,256</td>
<td>1,780</td>
<td>1,515</td>
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<tr>
<td>Wisconsin</td>
<td>27,572</td>
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<td>10,860</td>
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<td>New York</td>
<td>13,469</td>
<td>610</td>
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<td>Idaho</td>
<td>13,431</td>
<td>573</td>
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<tr>
<td>Pennsylvania</td>
<td>10,565</td>
<td>533</td>
<td>7,200</td>
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</tbody>
</table>

Top 5 U.S. dairy states, 2013
National and Regional SMS Partners

**National Partners**

**Industry**
- Working groups, topic experts

**Academia**
- Iowa State University
- University of California, Davis
- University of Minnesota

**USDA-APHIS-VS**
- National Preparedness and Incident Coordination (NPIC)

**Regional Partners**

- California
- Colorado
- New England States Animal Agricultural Security Alliance (NESAASA)
  - CT, MA, ME, NH, RI, VT
- Mid-Atlantic States
  - VA, MD, TN, NC, SC, DE, WV, NJ, PA
- Michigan
- Pacific Northwest
  - WA, OR
- Wisconsin
Diversity of Milk Production Among SMS Regional Partners, 2012

**Sources:**
- Hoard's Dairyman, Table 3. Dairy farm numbers by state and region, 2012; March 13, 2013, p. 151 (Data from USDA NASS)
SMS Plan Components

• Biosecurity performance standards
  – Dairy premises, milk haulers, processing plants

• Pre-event risk assessments
  – Identify needed mitigation steps to minimize FMD virus spread

• Milk movement decision support tools
  – Guidance documents
  – Herd monitoring/surveillance tools
  – Handling of milk from FMD infected farms
  – Surge capacity for FMD vaccination
Line of Separation (LOS) (Milk tanker does not cross in this example)

- Farm dedicated hose
- Licensed weigher/sampler on farm
  - Wears gloves
Management Issues in a Large FMD Outbreak

• On-farm calf rearing and management of replacement heifers

• Enabling other necessary activities (cropping, manure handling, feed, etc.)

• Milk handling from FMD infected or vaccinated dairies

• Dairy export loss mitigation opportunities for industry
Export loss mitigation opportunities for the dairy industry

- U.S. Dairy Export Council funded initial review
- Review conducted by CFSPH, ISU
- Encouraging industry to pursue evaluation of exported dairy commodities (whey powder, lactose, NDMP and cheeses)

www.securemilksupply.org
Under “FMD Info”
Bulk tank milk testing strategy for FMD

• There is a bulk tank milk PCR test for FMDv
• It is currently undergoing final review at the national level for deployment to selected US NAHLN laboratories
• The robust industry bulk tank milk sampling program could be leveraged during an outbreak to find FMD cases more quickly
• Testing strategies for various scenarios are being developed
Messaging will be critical to maintaining U.S. consumer confidence

- FMD is NOT a public health concern
  - NOT hand-foot-mouth disease that affects children
  - NOT the same as BSE or “mad cow disease”

- Industry has invested heavily on crisis communications preparedness [www.FootAndMouthDiseaseInfo.org](http://www.FootAndMouthDiseaseInfo.org)

- Industry representatives suggest using term “HOOF and Mouth Disease” in messaging
U.S. FMD vaccination contingency planning....One size does not fit all
How do we increase availability of emergency vaccine?

It is estimated that $150M over 5 years is needed to enhance the U.S. FMD antigen bank to properly protect the $100B U.S. animal industries.
Development of producer training materials

A SMS- HMD Emergency Response Plan

A
Perimeter Bio-security

B
Cleaning & Disinfection

C
Herd Monitoring for Disease
Creating a HMD Emergency Response Plan for your dairy...

Hoof & Mouth Disease

Emergency Response Plan for

Dairy Facility Name

During an outbreak of Hoof and Mouth Disease (HMD) local or state-wide quarantine and movement restrictions will be ordered. Such restrictions may prohibit movement of animals and animal products, like milk. Dairies that have implemented approved emergency biosecurity practices and are monitoring their herds for disease may be permitted by regulatory agencies to continue to ship milk to commercial processing, even during quarantine. The following plan represents biosecurity procedures this dairy will implement during such an event.
There are technical issues and many challenges that remain ... 

- It is a voluntary program
- Economics and competing challenges in animal agriculture and government can make sustained FAD planning efforts very challenging
- Information technology to support management and scalable permitting
• FMD Info
• Dairy Industry Manual
• Phases and Types
• Inactivation of FMDV in dairy products
• Vaccination info
• FMD Response Plan
• OIE resources
Secure Food Supply Plans

USDA Foot-and-Mouth Disease Response Plan
"The Red Book"

Phases & Types of an FMD Outbreak

NAHEMS Guidelines: Continuity of Business

NAHEMS guidelines: Vaccination for contagious diseases; Appendix A: Vaccination for Foot-and-Mouth Disease

FMD Vaccine Surge Capacity for Emergency Use in the United States

Inactivation of Foot-and-Mouth Disease Virus in Milk Products

Foot and Mouth Disease in Pigs - Progression of Lesions
Acknowledgements

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Thank you!