

# QUARTERLY DAIRY LEGAL WEBINAR

1st Quarter 2025  
April 15, 2025

*Focus Topic:*  
**Bovine Disease Controls: Federal and  
PA Laws & Regulations**



**PennState**  
Dickinson Law

Center for Agricultural and Shale Law



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# Quarterly Dairy Legal Webinar Series

## #19 in the series – covering the 1st quarter of 2025

- October 2024: Raw Milk—An Overview of State Raw Milk Regulations
- July 2024: U.S. State Milk Pricing & Supports, part 2
- April 2024: U.S. State Milk Pricing & Supports, part 1
- February 2024: Pennsylvania Milk Marketing Law (Beyond the OOP)
- October 2023: Risk Management/Income & Revenue Protection
- July 2023: Federal Milk Marketing Order Administrative Process
- April 2023: International Dairy Trade
- January 2023: Interstate Regulation of Milk Production and Processing
- October 2022: 2023 Farm Bill and the Potential Implications for the Dairy Industry
- July 2022: Labeling Standards
- April 2022: Animal Welfare
- February 2022: Dairy Industry Carbon Reduction Programs
- December 2021: USDA's Pandemic Assistance Programs
- July 2021: Geographical Indications
- April 2021: Federal Milk Marketing Order Reform
- January 2021: International Trade with Becky Rasdall
- October 2020: Federal Milk Marketing Order 51



Find upcoming topics at <https://aglaw.psu.edu/quarterly-dairy-legal-webinar/>








## Past Quarterly Dairy Legal Webinars and Materials

**April 18, 2023 (1st Quarter of 2023)** 12 noon ET. In addition to a round-up of quarterly legal developments, the focus topic will be the **International Dairy Trade: Canada-U.S. USMCA Arbitration Round 2**. Almost immediately upon entering the USMCA trade pact with Canada and Mexico in 2020, the U.S. trade relationship with Canada hit a rough patch over potential dairy exports to Canada, specifically the eligibility criteria for Canadian importers' potential use of a quota of favorable dairy tariff rates on U.S. dairy products. The U.S. took Canada to arbitration in 2021 and won. Nevertheless, Canada held steadfast to its dairy tariff rate quota system and made minimal changes. As a result, we are now headed to a second round of USMCA arbitration between the U.S. and Canada over the same, and some newly added, tariff rate eligibility issues. All will be explained as we examine the details of this dispute between international neighbors.

- [PowerPoint – April 2023 Quarterly Dairy Legal Webinar](#)
- [January-March 2023 Quarterly Dairy Legal Update](#) 
- [Recording: April 2023 Quarterly Dairy Legal Webinar – Industry Round Up](#)
- [Recording: April 2023 Quarterly Dairy Legal Webinar – International Dairy Trade](#)

**January 17, 2023 (4th Quarter of 2022)** 12 noon ET. In addition to a round-up of quarterly legal developments, the focus topic will be the *Interstate Regulation of Milk Production and Processing: An Overview of the Pasteurized Milk Ordinance and Interstate Milk Shippers Program*. The federal government's current role in the creation and maintenance of a federal milk pricing system is recognized. The historical state-by-state regulation of milk production and processing as a food safety function of government is sometimes said to be historically "left to the states." However, the reality is much more complex. Learn the nuts and bolts of how this most perishable of agricultural commodities has been freely flowing across state lines through a combination of federal and state regulatory authority and a large amount of voluntary industry contribution and compliance.

- [2022 Annual Dairy Legal Update](#) 
- [October-December 2022 Quarterly Dairy Legal Update](#) 
- [PowerPoint – January 2023 Quarterly Dairy Legal Webinar](#) 
- [Recording: January 2023 Quarterly Dairy Legal Webinar](#)

### Shale Law Weekly Review

A WEEKLY UPDATE ON IMPORTANT  
SHALE LAW DEVELOPMENTS



AG LAW PODCAST



FARMLAND ENERGY  
LEGAL PODCAST

<https://aglaw.psu.edu/quarterly-dairy-legal-webinar/>



## Upcoming programs from the Ag Law Center: *Understanding Agricultural Law Educational Program*

*Understanding the Basics of--*

April 25, 2025—PA Ag Exemptions for Inheritance Tax and Real Estate Transfers

May 30, 2025—Migrant and Seasonal Agricultural Worker Protection Act

June 27, 2025—PA's Clean & Green Program: County-Level Administration

July 25, 2025—ADA Compliance for Agritourism Operations

Aug. 22, 2025—Foreign Agricultural Land Ownership Laws

*Attorney CLE available*

Register at <https://aglaw.psu.edu/understanding-agricultural-law/>

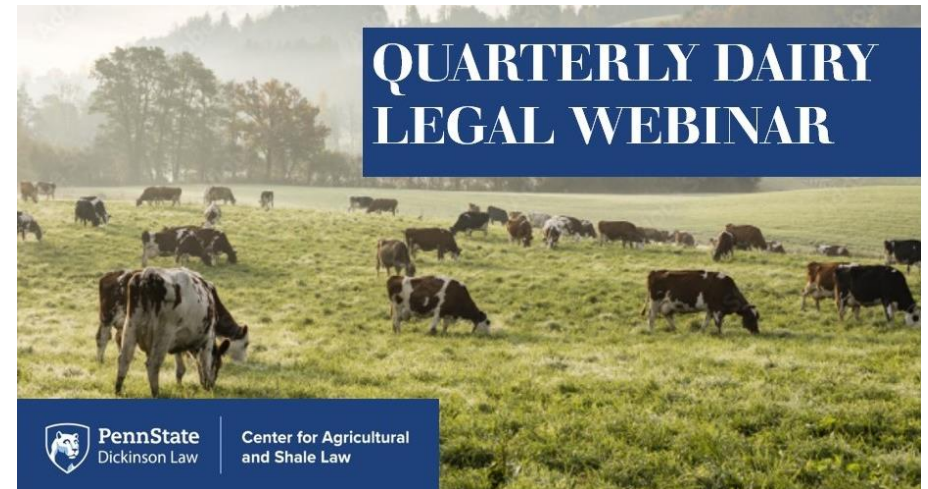
All events: <https://aglaw.psu.edu/events/>

Upcoming programs from the Ag Law Center:

**Quarterly Dairy Legal Webinar Series:**

**July 15, 2025—2nd Quarter of 2025: 2025  
Federal Milk Marketing Order Reforms**

*Attorney CLE Available*



Register at <https://aglaw.psu.edu/events/>



Upcoming programs from the Ag Law Center:

**Partner Programs with the National Agricultural Law Center:**

**May 21, 2025**—Navigating ADA Compliance for Agritourism Guests,  
*Center Staff Attorney Jackie Schweichler*

**June 18, 2025**—An Overview of State Grain Dealer Statutes in the  
United States, *Center Director Ross Pifer*



Register at <https://aglaw.psu.edu/events/>



Upcoming programs from the Ag Law Center:

**Save the Date—Mark your calendar!**

# ***2025 Agricultural Law Symposium***

**Thursday, September 18, 2025**

In-person at Penn State Dickinson Law, University Park

Lunch & refreshments provided

6 Attorney CLE Credits available

*More information & registration coming soon!*

<https://aglaw.psu.edu/events/>





# QUARTERLY DAIRY LEGAL WEBINAR

**1st Quarter 2025**  
**April 15, 2025**

**Round Up 1st Quarter 2025**



**PennState**  
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**Center for Agricultural and Shale Law**



# Industry Round-up – 1<sup>st</sup> Quarter 2025

- **FMMO Pricing Changes**
  - USDA Published Final Rule on FMMO Pricing Changes
- **Highly Pathogenic Avian Influenza (HPAI)**
  - National Milk Testing Strategy Expands to 36 States
  - Minnesota Began Testing for Raw Milk
  - Elanco, Medge to Launch HPAI Vaccine for Dairy Cattle
- **New FDA Guidance on Low-Moisture Food Safety**
  - FDA Released Draft Guidance on Low-Moisture Food Safety
- **Milk-related Matters**
  - Brown Foods Announced First Lab-Grown Milk
  - Utah Bill Established Raw Milk Illness Procedures
  - North Dakota Bill Allowed Whole, Flavored Bulk Milk in Schools
  - Arkansas Allowed Raw Milk Sales
- **International Dairy Issues**
  - U.S., Guatemalan Dairy Industries Signed International Trade MOU
  - New USDA Restrictions on German Animal Imports



## USDA Published Final Rule on FMMO Pricing Changes

- On January 17, 2025, the USDA AMS [published](#) a final rule amending the pricing provisions in all Federal Milk Marketing Orders (FMMOs). This rule finalizes the changes proposed in the proposed rule (89 FR 95466), including:
  - **Milk composition standards**—updated protein, solids, and nonfat solid levels (**effective December 1, 2025**)
  - **Cheese price survey**—removes 500-lb barrels; uses 40-lb block prices only (effective June 1, 2025)
  - **Class III and IV formula factors**—updated make allowances and butterfat recovery factor (effective June 1, 2025)
  - **Base Class I skim milk price**—returns to “higher of” method; introduced ESL adjustment (effective June 1, 2025)
  - **Class I and II differentials**—retains \$1.60 base; updated location-based values (effective June 1, 2025)



# National Milk Testing Strategy Expands to 36 States

- The [National Milk Testing Strategy](#) launched in December 2024
  - [April 2024 Federal Order](#)—requires HPAI testing for interstate dairy cattle movement
  - [December 2024 Federal Order](#)—requires nationwide raw milk sampling for HPAI testing
- [Five-step roadmap](#) to help states (1) detect HPAI, (2) remove the virus, and (3) certify herds as virus-free
  - January 8, 2025: 15 states joined
  - January 17, 2025: 6 more states added
  - As of today, **45 continental states are participating in the strategy**
    - Only North Dakota, Florida, and Maine are not
  - [USDA Interactive Map—Current Status by State](#) (updated every Friday)





## Minnesota Began Testing Raw Milk

- As of February 24, 2025, Minnesota began **monthly testing of unpasteurized milk** for signs of HPAI as part of the **USDA's National Milk Testing Strategy (NMTS)**.
  - If a test comes back positive, officials will confirm with a second sample and quarantine the farm for at least 30 days.
  - To end the quarantine, a farm must show three negative results, each at least seven days apart, and implement safety protocols.
- The Minnesota Department of Agriculture (MDA) [noted](#) that "[there] is no concern for the safety of the public milk supply, as all milk sold in stores is pasteurized to kill bacteria and viruses, and pasteurization has been shown to effectively eliminate active H5N1 virus present in milk."



## Elanco, Medgene Launched HPAI Vaccine for Dairy Cattle

- *“As egg prices soar and milk production wanes in infected dairies, the need for new solutions to curb disease spread is evident ... Elanco is pleased to partner with Medgene to bring customers options to fight this devastating disease and believes this product will become part of a routine vaccination protocol for the U.S. dairy industry.”*
- Announced February 25, 2025, Elanco [partnered](#) with **Medgene** to bring to market a vaccine targeting **highly pathogenic avian influenza (HPAI) in dairy cattle**.
  - Developed in response to the widespread HPAI outbreak, which has affected more than 1,000 dairy herds and led to animal-to-human transmission.
  - The vaccine uses Medgene’s USDA-approved platform technology guidelines and is in final stages of conditional approval.



## FDA Released Draft Guidance on Low-Moisture Food Safety

- The FDA [released](#) proposed guidelines to help food manufacturers meet **safety standards** for **low-moisture, ready-to-eat (LMRTE) foods**.
  - The guidance focuses on responding quickly after contamination by harmful pathogens.
  - Products covered include:
    - **Powdered baby formula**, nut butters, chocolate
    - Drink mixes, **milk powders**, spices
    - Snack foods, granola bars, dry cereal
    - Medical foods in powder or paste form
  - The public can submit feedback on the draft **until May 7, 2025**



# Brown Foods Announced First Lab-Grown Milk



- On February 25, 2025, Boston-based start-up Brown Foods introduced **first-ever cultured whole cow milk**: [UnReal Milk](#)
  - Not a plant-based milk alternative, but “real whole cow milk in lab!”
- Created using **mammalian cell culture** (i.e., grown from milk-producing cells in a lab, includes caseins, whey proteins, milk fats, and natural sugar)
- Verified by **independent scientists** at the Whitehead Institute (MIT-affiliated)
- Consumer trials **expected by end of 2025**; market pilot **planned for 2026**





## Utah Bill Established Raw Milk Illness Procedures

- [HB 414](#) – adopted March 19, 2025
  - Defines a **foodborne illness outbreak** as “the occurrence of two or more cases from different households of a similar illness resulting from the ingestion of a common food.”
  - Requires testing raw milk in **independent labs**
  - If raw milk is linked to an outbreak:
    - The state can **order the producer to stop selling** the milk
    - Samples must be tested **within 2 working days**
    - Sales can resume only when health standards are met
  - **Noncompliance** or a confirmed link to illness can result in a **suspended permit**
    - The producer can reapply once safety measures are in place.



# North Dakota Bill Allowed Whole, Flavored Bulk Milk in Schools

- [HB 1132](#) – adopted March 24, 2025
  - **School districts and approved nonprofit schools** can set policies to offer a wider variety of milk options.
  - Schools may **serve whole, 2%, and flavored pasteurized milk** using **bulk milk dispensers**.
  - “Bulk milk” follows the definition set in North Dakota’s agricultural code.



## Arkansas Allowed Raw Milk Sales

- [HB 1048](#) – adopted January 30, 2025
  - The law allows **direct, small-scales sales** of unpasteurized goat, sheep, and whole cow milk.
  - These sales can happen:
    - At the farm
    - At farmer's markets
    - By direct delivery from the farm to the customer
  - **Advertising is permitted** for these small-scale raw milk sales.



# U.S., Guatemalan Dairy Industries Signed International Trade MOU

- [Memorandum of Understanding between the Guatemalan and U.S. Dairy Industries](#) (March 19, 2025)—Guatemala’s Dairy Development Association (ASODEL), the U.S. Dairy Export Council (USDEC) and the National Milk Producers Federation (NMPF).
- “The main objective of this Agreement is to **strengthen institutional relations** between the signatory associations and to **promote the exchange of knowledge** on matters of mutual interest, as well as to **carry out actions in defense of milk and dairy products** in our markets. Similarly, both groups **stand in favor of free and fair trade** between our countries, always **promoting the consumption of high-nutritional quality milk and dairy products** for the benefit of consumers in Guatemala and the United States, among others.”





# New USDA Restrictions on German Animal Imports

- [USDA APHIS Import Alert: Food-and-Mouth Disease Restrictions for Animal Commodities Originating from or Transitioning Germany](#) (effective January 10, 2025)
  - No entry for live animals and their byproducts (from or via Germany), including cows, goats, pigs, camels, hedgehogs, etc.
- **Milk Products—What is allowed?**
  - **Processed milk products**
    - Allowed as cargo with USDA permit and/or official German certification
    - Allowed in luggage if shelf-stable or have permit/certification
- **Milk Products—What is not allowed?**
  - **Unprocessed milk products** (e.g., raw milk, soft cheeses made from raw milk, unpasteurized milk products, etc.) except if transferred to USDA-approved facilities (none currently approved for milk products).

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# Bovine Disease Controls – Federal

## *Scope:*

- Not including HPAI - was covered in [4th Quarter of 2024: HPAI in Dairy Cattle: Regulatory Measures Thus Far \(2/18/25\)](#)
- Today: Review of the history and legal implementation of bovine disease control requirements for
  1. Brucellosis
  2. Tuberculosis
  3. Foot and Mouth Disease,
  4. Bovine Spongiform Encephalopathy (BSE), otherwise known as Mad Cow Disease.



# FMD detected in Hungary



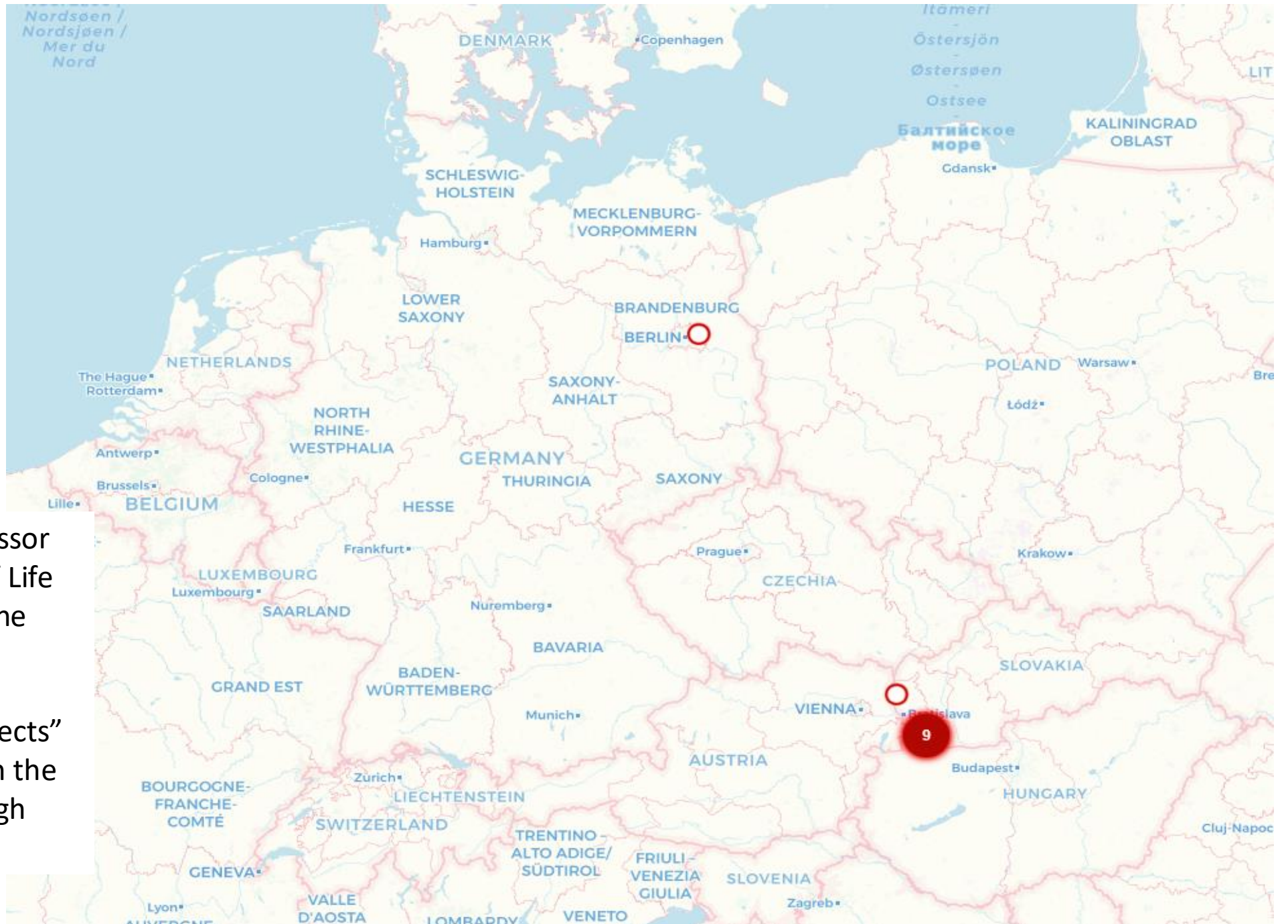
- AP: [Foot-and-mouth disease outbreak in Central Europe leads to animal culls and border closures](#) (4/12/25).
- Reuters: [Hungary suggests 'biological attack' could be source of foot-and-mouth outbreak](#) (4/10/25).
- Hungary, Slovakia, Austria – 1<sup>st</sup> cases in 50 years.
- 11 Infected sites confirmed across ~ 1000 farms tested; Border crossing closings and import restrictions abound in the region and across EU & UK. “Thousands” culled in Hungary. Prime Minister Orban “biological attack” could not be ruled out.



## Interactive Map of Current FMD cases in Central Europe

Hungary livestock census in Dec. 2024 showed 861K head of cattle, constituting 1.2% of EU total cattle stocks.

Jiri Cerny, associate professor at the Czech University of Life Sciences in Prague, said the most significant risk of transmission is “through contaminated human objects” such as “tires and cars, on the soles of shoes, and through contaminated food.”





The 2001 outbreak saw huge numbers of cattle culled across the UK (Image: Getty)





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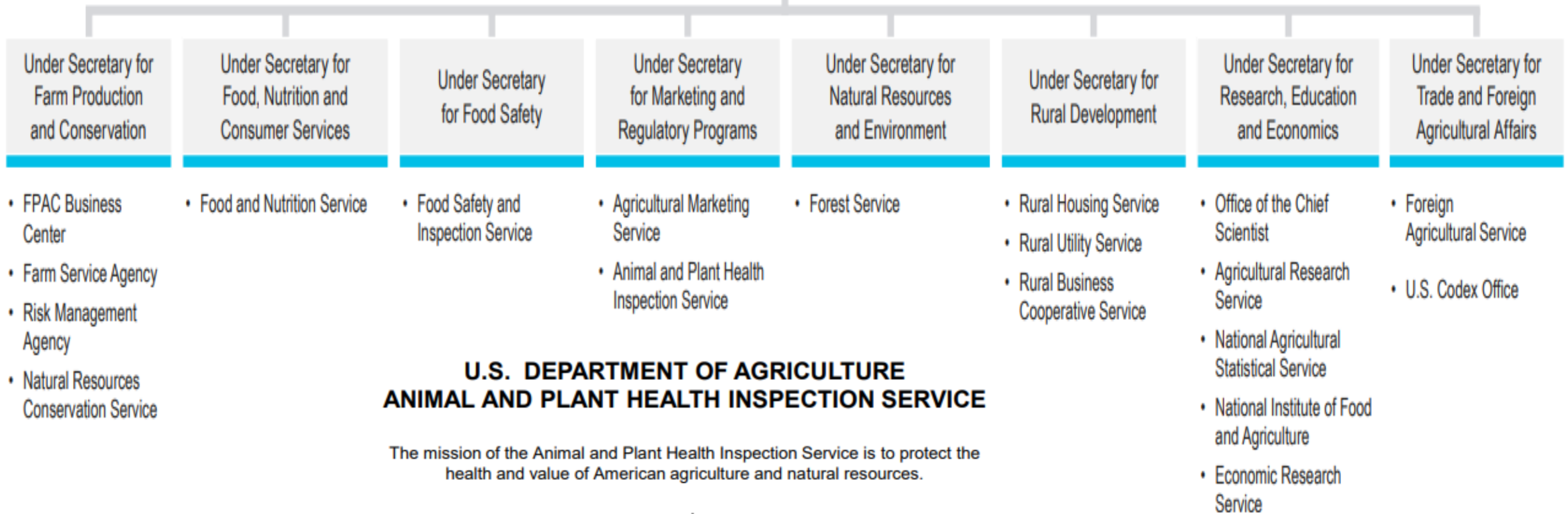
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# **Federal Legal Authority**

## **for Animal Disease Control**



# USDA Org Chart – Where is Animal Disease Control?





# Animal Health Protection Act (7 U.S.C. § 8301 - 8322)

## **CHAPTER 109—ANIMAL HEALTH PROTECTION**

- Re-enacted wholesale as part of 2002 Farm Bill from provisions of various dates and statutes.
- “To prevent and eliminate burdens on interstate commerce and foreign commerce” – among other findings in the preamble.
- Concurrent with states’ “intra-state” authority.
- States depend upon USDA for technical assistance, research and resources/\$\$\$ (indirect mostly).
- Authority granted is **extremely broad** – see following slides.

Sec.	
8301.	Findings.
8302.	Definitions.
8303.	Restriction on importation or entry.
8304.	Exportation.
8305.	Interstate movement.
8306.	Seizure, quarantine, and disposal.
8307.	Inspections, seizures, and warrants.
8308.	Detection, control, and eradication of diseases and pests.
8308a.	Animal disease prevention and management.
8309.	Veterinary accreditation program.
8310.	Cooperation.
8311.	Reimbursable agreements.
8312.	Administration and claims.
8313.	Penalties.
8314.	Enforcement.
8315.	Regulations and orders.
8316.	Authorization of appropriations.
8317.	Effect on regulations.
8318.	Veterinary training.
8319.	Surveillance of zoonotic diseases.
8320.	Expansion of Animal and Plant Health Inspection Service activities.
8321.	Pest and Disease Response Fund.
8322.	National aquatic animal health plan.





# Powers Granted to USDA-APHIS (§8301 – 8305)

- Grants **Import, Export and Interstate** movement authority

- What regulated?      **Pests and Diseases of Livestock.**

Livestock: “all farm-raised animals.”

Disease – “the meaning given that term by the Secretary.”

Pest - “any of the following that can directly or indirectly injure, cause damage to, or cause disease in livestock: protozoan, plant, bacteria, fungus, virus or viroid, infectious agent or other pathogen, arthropod, parasite, prion, vector, any organism similar to or allied with any” of the foregoing.

- How?      Issue **orders** and promulgate **regulations . . .**

- prohibiting or restricting importation, entry, or movement, or
- order the destruction, removal or disinfection,
- “of any animal, article or means of conveyance;”
- **“necessary to prevent the introduction into or dissemination within the United States of any pest or disease of livestock.”**



- Contains identical grants of authority re: exportation “necessary to prevent the **dissemination from** or within the United States of any pest or disease of livestock.”
- Contains identical grants of authority re: interstate movement “necessary to prevent the introduction or **dissemination within** the United States of any pest or disease of livestock.”
- Export certification: “The Secretary may certify the classification, quality, quantity, condition, processing, handling, or storage of any animal or article intended for export.”
- Enforcement – If **failure to comply with order**, “take remedial action, destroy, or remove from the United States the animal or progeny of any animal, article, or means of conveyance” and “and recover from the owner the costs of any care, handling, disposal, or other action.” [includes “equitable” measures]



# Seizure, Quarantine, and Disposal - §8306(b)

- May “**seize, quarantine, treat, destroy**, dispose of, take other remedial action re: animal or progeny of any animal, article, or means of conveyance” “moving or has been moved in **interstate commerce or has been imported** or entered” **and**
- “**the Secretary has reason to believe may carry, may have carried, or may have been affected with or exposed to any pest or disease of livestock**” or otherwise is in violation of the statute, regs or orders.



# Extraordinary Emergencies – §8306 (b)

- “if the Secretary determines
  - that an **extraordinary emergency exists because of the presence** in the United States of a pest or disease of livestock and
  - that the **presence of the pest or disease threatens the livestock** of the United States,
- **hold, seize, treat**, apply other **remedial actions** to, **destroy** (including preventative slaughter), or otherwise **dispose** of, any animal, article, facility, or means of conveyance **if the Secretary determines the action is necessary** to prevent the dissemination of the pest or disease.
- “The Secretary may **take action in a State** under this subsection only on finding that measures being taken by the State are inadequate to control or eradicate the pest or disease, **after review and consultation**,” with the Governor or tribal head.
  - Also contains public notice and Federal Register publication requirements.



# Compensation - §8306 (d)

- “The Secretary shall **compensate the owner** of any animal, article, facility, or means of conveyance that the Secretary requires to be destroyed under this section.”
- **Fair market value**, as determined by the Secretary (minus “any compensation received by the owner from the State or other source.”)
- “The determination by the Secretary of the amount to be paid . . . **shall be final and not subject to judicial review.**”
- **Disqualifications** - No payment shall be made if
  - moved or handled by the owner in violation of an **agreement for the control and eradication of diseases** or pests or in violation of this chapter;
  - any animal, article, or means of conveyance that is **refused entry** under this chapter [*i.e. rejected at the border*];
  - becomes affected with or exposed to any pest or disease of livestock because of a violation of an **agreement for the control and eradication of diseases or pests** or a violation of this chapter by the owner.





# Other powers granted

## 8307(b) Warrantless inspections:

The Secretary may stop and inspect, without a warrant, any person or means of conveyance moving—

- (1) **into the United States**, to determine whether the person or means of conveyance is carrying any animal or article regulated under this chapter;
- (2) **in interstate commerce, on probable cause to believe that the person or means of conveyance is carrying any animal or article regulated under this chapter; or**
- (3) **in intrastate commerce from any State**, or any portion of a State, **quarantined under section 8306(b)** of this title, **on probable cause** to believe that the person or means of conveyance is carrying any animal or article quarantined under section 8306(b) of this title.



# Warrantless investigatory powers granted

## §8308 Detection, Control, and eradication of diseases and pests

- “The Secretary may carry out operations and measures to **detect, control, or eradicate any pest or disease of livestock (including the drawing of blood and diagnostic testing of animals)**, including animals at a slaughterhouse, stockyard, or other point of concentration.”
- “The Secretary may **pay a claim** arising out of the **destruction of any animal**, article, or means of conveyance consistent with the purposes of this chapter.”
- The Secretary shall **compensate industry participants and State agencies** that cooperate with the Secretary in carrying out operations and measures under subsection (a) for 100 percent of eligible costs relating to cooperative programs involving Federal, State, and industry participants to control diseases of *low pathogenicity* in accordance with regulations issued by the Secretary.

# Animal Health Protection Act Regs

9 CFR §

FMD has a “RED BOOK”  
– [FMD Foreign Animal Disease Preparedness and Response Plan](#)  
(FAD PReP).

BSE has never been detected in the U.S.

BSE does not have any regulations, nor a “RED BOOK.”

Title 9	Animals and Animal Products	Part / Section
▼ Chapter I	Animal and Plant Health Inspection Service, Department of Agriculture	1 – 199
▼ Subchapter B	Cooperative Control and Eradication of Livestock or Poultry Diseases	49 – 56
▼ Part 49	Rules of Practice Governing Proceedings Under Certain Acts	49.1 – 49.10
Subpart A	General	49.1
Subpart B	Supplemental Rules of Practice	49.10
★ ▼ Part 50	Animals Destroyed Because of Tuberculosis	50.1 – 50.22
§ 50.1	Definitions.	
Subpart A	General Indemnity	50.2 – 50.16
Subpart B	Dairy Cattle and Facilities in the El Paso, Texas, Region	50.17 – 50.22
★ ▼ Part 51	Animals Destroyed Because of Brucellosis	51.1 – 51.33
Subpart A	Indemnity for Cattle, Bison, and Swine	51.1 – 51.10
Subpart B	Indemnity for Sheep, Goats, and Horses	51.20 – 51.33
▶ Part 52	Swine Destroyed Because of Pseudorabies	52.1 – 52.7
★ ▶ Part 53	Foot-and-Mouth Disease, Pleuropneumonia, and Certain Other Communicable Diseases of Livestock or Poultry	53.1 – 53.11
▼ Part 54	Control of Scrapie	54.1 – 54.22
§ 54.1	Definitions.	
§ 54.2	Cooperative agreements and memoranda of understanding with States.	
Subpart A	Scrapie Indemnification Program	54.3 – 54.11
Subpart B	Scrapie Free Flock Certification Program	54.20 – 54.22
▼ Part 55	Control of Chronic Wasting Disease	55.1 – 55.25
§ 55.1	Definitions.	
Subpart A	Chronic Wasting Disease Indemnification Program	55.2 – 55.8
Subpart B	Chronic Wasting Disease Herd Certification Program	55.21 – 55.25
▶ Part 56	Control of H5/H7 Low Pathogenic Avian Influenza	56.1 – 56.10



United States Department of Agriculture

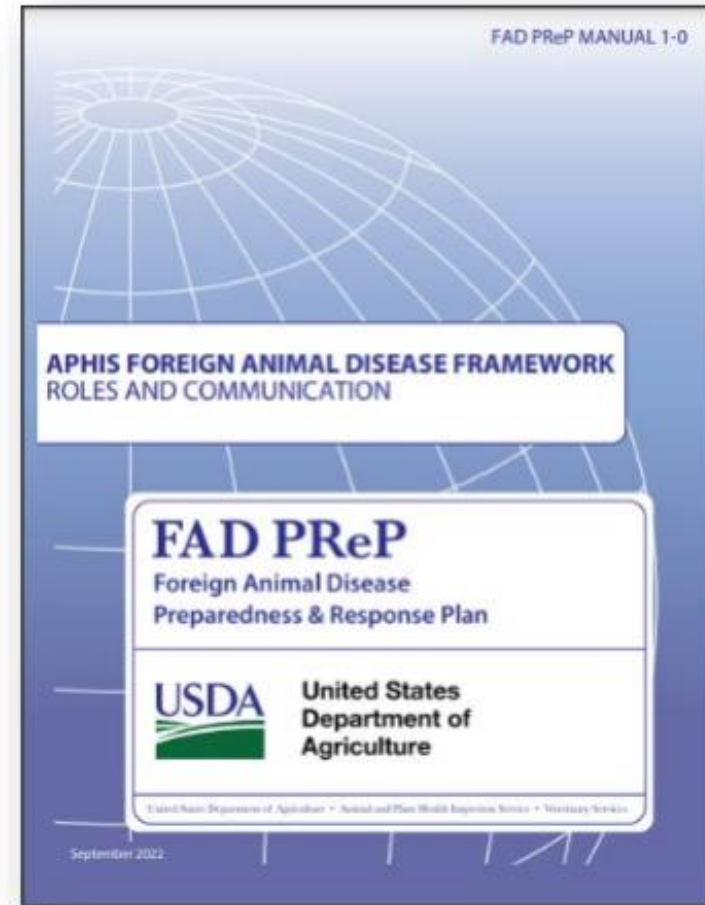
# Roles and Coordination

## APHIS Foreign Animal Disease Framework

### FAD PReP Manual 1-0

September 2022

[Link to source](#)





# **“Red Books”**

## ***Foreign Animal Disease Preparedness and Response Plans (FAD PReP)***

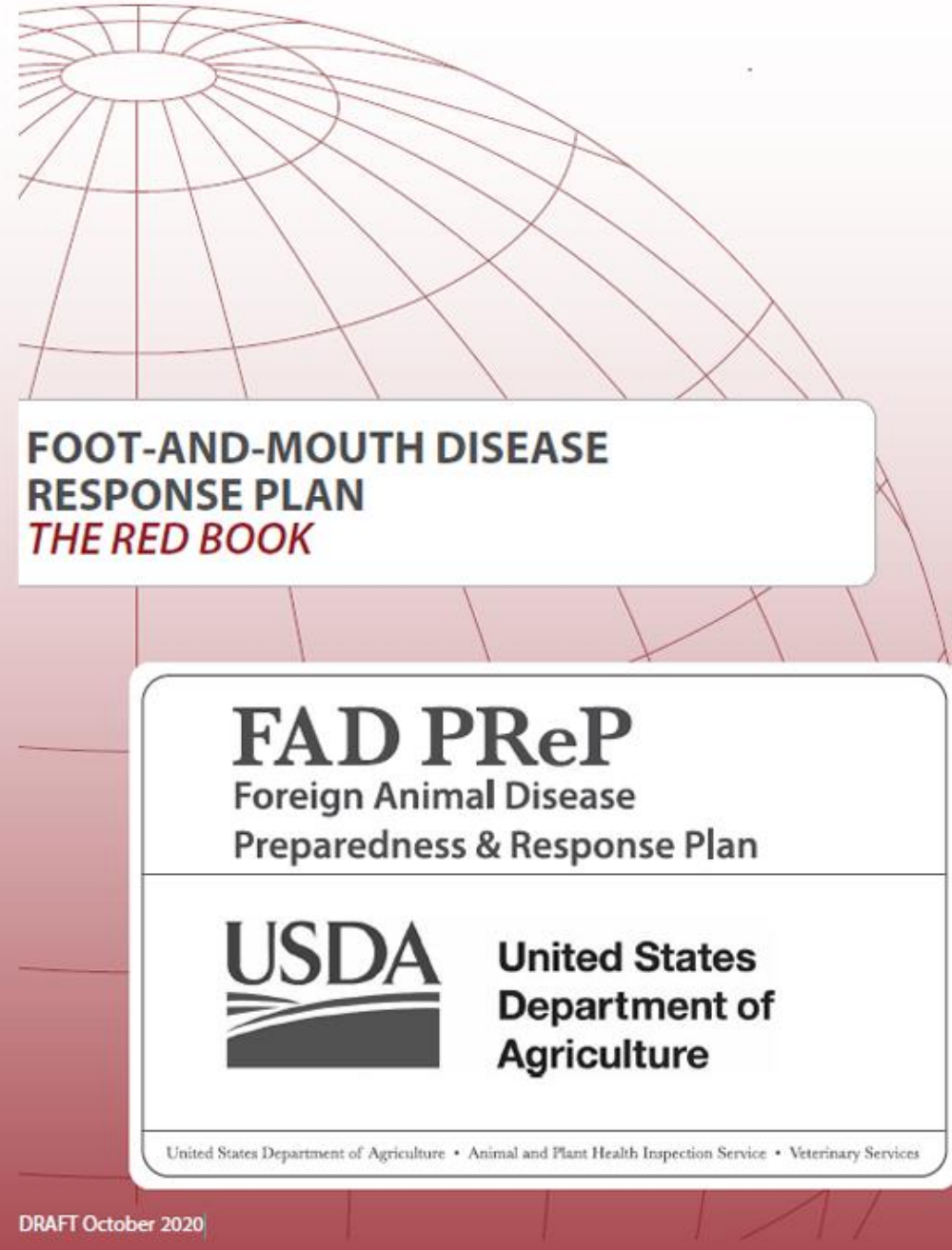
FAD	Primary type of animal affected	Highly contagious disease	Vector- borne disease	Zoonotic disease potential
Diseases with FAD PReP Response Plans (Red Books)				
Highly pathogenic avian influenza (HPAI)	Avian, others	Yes	No	Yes
Foot-and-mouth disease (FMD)	All cloven hoofed animals	Yes	No	No
Classical swine fever (CSF)	Swine	Yes	No	No
Newcastle disease (ND) (virulent ND virus)	Avian	Yes	No	Yes Minor





# **FMD Red Book** (Updated October 2020)

- FMD is a highly contagious viral disease that may affect domestic cloven-hoofed animals (cattle, swine, sheep, and goats) and many wild animals (deer, bison, pronghorn antelope, and feral swine).
- Characterized by fever, vesicular (blister-like) lesions, and subsequent erosions (ulcers) of the surfaces of the mouth, tongue, nostrils, muzzle, feet, and teats.
- Does not typically kill adult livestock; detrimental effects on productivity (meat and milk); high mortality rates may occur in young animals.
- FMD - not considered a public health risk (human).
- Most contagious disease of livestock; “high priority concern” USDA-APHIS.
- U.S.: FMD-free since 1929; Canada-1952; Mexico-1954
- World: FMD found in ~2/3rds of the world.
- Susceptible animals in U.S: (2017 data): ~93.M cattle, ~72.4M swine, and 8M sheep and goats.





# Foot and Mouth Disease (FMD)

- [USDA-APHIS FMD Homepage; 7 CFR Part 53](#)
- 2001 FMD U.K. outbreak – est. \$12-18B economic impact
- FMD infections in humans very rare; ~ 40 cases dx since 1921.
- “morbidity is significant and can approach 100 percent. Mortality is typically low in adult animals (1–5 percent), and higher in very young animals.”
- Indemnity and Compensation operate very similar to HPAI.
- Emergency-developed vaccination is a possibility.
- “Effective FMD vaccines do exist, but they are strain specific (most strains require their own vaccine and do not cross-protect against infection from other strains, also known as subtypes).”
- Stamp-Out approach? See next slide.

## CAN'T WE JUST STAMP-OUT FMD?

- Historically, FMD has been controlled by depopulating (also known as stamping-out) infected animals.
  - Today, in the United States, complete stamping-out of anything beyond a small, focal FMD outbreak may not be a viable or sustainable response strategy.
- The cost of implementing a total stamping-out strategy could be inordinately high.
  - The depopulation and disposal of large numbers of animals may not be publicly acceptable.
  - There is not sufficient capacity to rapidly depopulate and appropriately dispose of large numbers of large animal carcasses.
  - There may be severe and irreparable economic losses for producers from the loss of production animals and destruction of genetic stock.
  - There are critical social and environmental consequences from large-scale animal depopulation; producers, owners, and communities can be devastated.
  - There may be a lengthy interruption in the domestic food supply chain for key commodities destined for domestic consumption, including milk, meat, and cheese.

## *Planning and Preparing for* **Foot-and-Mouth Disease**



### *Quick Briefing*



[LINK](#)



# Brucellosis

- [9 CFR Part 51](#) and [9 CFR Part 78](#); [USDA-APHIS Brucellosis Homepage](#) ; [National Brucellosis and Tuberculosis Quarterly Report StoryMap](#)
- Bacterial infection; spreads animal to animal via bodily fluids, tissues and milk. Causes spontaneous abortions and complications with retained afterbirth; fertility rate decrease; weak, unhealthy calves; decreased milk production; weight loss.
- “Brucellosis occurs mainly in cattle, bison, and [swine](#), but can affect other animals (cervids, goats, sheep, and horses) and people. In cattle and bison, the bacteria of concern is *Brucella abortus*. It has been present in the United States since the 1930s.
- U.S: “brucellosis-free, except for the occasional spillover of cases occurring in livestock near the Greater Yellowstone Area” in bison and elk (“ . . . the last remaining reservoir of this disease in the United States.”)
- Human risk is low but does exist: “ . . . usually by drinking unpasteurized milk from infected cows or by contact with infected birthing fluids and tissues.” Brucellosis testing is part of the PMO.
- Vaccination? – yes, RB51. Otherwise, no treatment.
- “Once a herd is affected, animal health officials quarantine all infected and exposed cattle and bison and limit their movement to slaughter only. This continues until the disease is no longer present in the herd.”



# Tuberculosis

- [National Brucellosis and Tuberculosis Quarterly Report StoryMap](#); [USDA APHIS Tuberculosis Homepage](#); [9 CFR Part 50](#) and [9 CFR Part 77](#)
- “. . . a contagious, infectious, communicable disease of animals and humans caused by *Mycobacterium bovis* . . . a chronic, debilitating disease but occasionally may assume an acute, rapidly progressive course. TB is a widespread zoonosis of global magnitude and affects nearly all species of vertebrates.”
- “Disease is spread by direct contact, inhalation of droplets expelled from infected lungs, and ingestion of contaminated feed or milk. All accredited veterinarians must immediately report every suspected or diagnosed bovine TB case” to federal and state animal health officials.
- “In 1917, the U.S. Bureau of Animal Industry began the National Tuberculosis Eradication Program . . . [as] strictly an eradication program for cattle but eventually included both bison and farmed cervids. The economic benefits of decreased slaughter condemnation and human infection far outweigh the cost . . .”
- “Infected cattle are typically asymptomatic. Detection usually occurs during live animal skin testing or, more commonly, at slaughter through [the] national slaughter surveillance program. If cattle or bison show clinical signs of tuberculosis, the disease has advanced to affect multiple organ systems, which is rare.”
- Bovine Infection rate: ~ 7 cows per 1M





# Bovine Spongiform Encephalopathy (BSE)

- *Mad Cow Disease* – prion (abnormal cellular protein) infection in the brain produces progressive and fatal nervous system disease in cattle. Signs appear 3-6 years after initial infection; death within 2 weeks to 6 months after signs appear; signs = abnormal temperament, posture, coordination, weight loss, decreased milk production.
- [USDA-APHIS BSE Homepage](#); [BSE Ongoing Surveillance Plan](#) (7/20/2006 – began in 1990); [National BSE Surveillance Plan](#) (Nov. 2024); no Red Book/FAD PReP; no regs.
- 1985: First known case, in U.K.; < 1 case per 1M cows; World Org. for Animal Health (WOAH) classifies U.S. as “negligible risk” for BSE since 2013; U.S. history = 7 cases btw. 2003-2023.
- 1<sup>st</sup> U.S. case was “classical BSE” (meaning contracted from feed containing meat-and-bone meal or other animal protein that contained the prion). The cow was imported from Canada.
- The subsequent 6 U.S. cases were “atypical BSE” (meaning spontaneously occurring in all cattle at low rate – c/n “prevent” per se).



# Supply Chain BSE Control Measures

- Prohibiting mammalian meat-and-bone meal from being included in animal feed (since 1997)
- Banning specified risk materials (brain and spinal cord tissue from animals 30 months or older cattle) from our food supply, animal feed, or other products (including rendering operations) (since 2009)
- Destroying animals that show signs of BSE and animals that are associated with BSE positive cattle according to WOAHA guidelines
- The preferred method for disposing of BSE-infected carcasses is alkaline digestion or complete, high-temperature incineration.
- Banning cattle that can't stand or walk from the human food chain
- Prohibiting air-injection stunning of slaughter cattle
- Requiring additional process controls in advanced meat-recovery systems
- Forbidding the use of mechanically separated meat in human food



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Thanks for attending.  
**QUESTIONS?**

