Official Animal Identification for Interstate Movement & Scrapie Program

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Animal Disease Traceability Program

• Important for rapid tracing of animal’s origin during disease outbreaks
• Trace the index case (first case of disease) to the location where the animal originated and may have contracted the disease
• Trace animal’s that were exposed to the index case and monitor for signs of disease and prevent further spread.
Animal Disease Traceability Rules for Interstate Movement of Livestock

• Title 9 Code of Federal Regulations (CFR) Part 86 on January 9, 2013

• Requirements for official identification of livestock species including most cattle, bison, swine, sheep and goats, horses, poultry for movement of animals in interstate commerce

• Key aspects of Animal Disease Traceability Regulation:
  – Official ID
  – Interstate Certificate of Veterinary Inspection or other movement documents approved by the state required for animals moving interstate
Official Animal Identification

• Definition of Official Identification:
  – Contains US Shield
  – Official ID # - A nationally unique # that is permanently associated with an animal or group of animals that adheres to:
    • 1. National Uniform Eartagging System (NUES).
    • 2. Animal identification number (AIN).
    • 3. Location based number system.
    • 4. Flock based number system.
    • 5. Any other numbering system approved by the Administrator for the official ID of animals.
Official Individual Animal ID
Interstate Movement & Regulatory Testing

- USDA “840” RFID Tag
- USDA “840” Visual Tag
- USDA Silver (brite) Tag
- USDA Brucellosis Vaccinate Tag
- USDA Scrapie Tag (sheep & goats)
- Breed Registry Tattoo
- USDA “840” Microchip (equids & llamas)
- NUES Tag – NM producer tag
**Official Individual Animal ID**
Interstate Movement & Regulatory Testing

» **USDA “840” RFID Tag** $2 each, minimum order is 10 tags. Distributed through NMLB, producer needs a premises identification number (PIN).

» **USDA “840” Visual Tag** $1 each, minimum order is 10 tags. Distributed through NMLB, producer needs a PIN.

» **USDA Silver (brite) Tag** USDA, accredited veterinarians only.

» **USDA Brucellosis Vaccinate Tag (orange)** Distributed through NMLB, accredited veterinarians only. $20 per box of 100 tags.

» **USDA Scrapie Tag (sheep & goats)** USDA, free. Producer must have NM sheep/goat brand, then call USDA for scrapie tags.

» **Breed Registry Tattoo**

» **USDA “840” Microchip (equids & llamas)** $10 each. Distributed through NMLB, accredited veterinarians only.

» **NUES Tag – NM producer tag** 50¢ each. Distributed through NMLB, producer must have a NM cattle brand.
Premise Location for Official ID

- In New Mexico use of official identification requires a premise of origin of livestock
- Premises Identification Numbers (PINs)
  - Premise locations stored in USDA database
  - PIN format is two zeros or NM followed by 5 alpha-numeric characters
  - Requires accurate address or driving directions and GPS coordinates
- Location Identifiers (LIDs)
  - New Mexico LIDs format is “NMB” followed by producer’s 5 digit Master Brand Number (NMB12345)
  - Sheep and Goats: sheep and goat brand “NMBS” followed by four digit master brand number (NMBS1234)
  - Location identifier information is kept in State Livestock Board database
Cattle and Rodeo Stock

• New Mexico requires official animal identification and ICVIs for all beef cattle 18 months and older and all dairy cattle of any age moving interstate.

• Rodeo Stock: All rodeo stock must have official identification
  – Bulls: USDA approved official eartags or hot brand with breed registry number
  – Sport steers and heifers: USDA approved official ID
  – M branded Steers/Roping Steers: USDA approved official ID
  – Horses: official 840 coded microchip or hot brand of breed registry number
Exemptions to Official ID requirements for Interstate Movement

- Livestock moved directly to custom slaughter plants for personal consumption are exempt
- Movement of livestock directly from a location in one state through another state to another location in the original state
- Movement of livestock between a shipping and receiving state or tribe with another form of Identification, such as brands, approved by both states
- Commuter herd agreements may be approved between states
- Always check with the destination state for livestock movement requirements for interstate movement
Official ID: Mexico Imported Feeder Steers, Spayed Heifers and Roping Steers

- Identification includes M brand on right hip and farm of origin brand on left hip
- Blue metal TB test tag applied when tested at import facility in Mexico
- Yellow SAGARPA bangle and matching button tag from farm or origin
- Roping steers also have RFID tags
- Spayed heifers also have a blue button tag
- Study using high frequency electronic ID at port
Sheep and Goats

• Follow requirements of USDA Scrapie Eradication Program:
  – USDA Scrapie tags required for transfer of ownership, public livestock auctions, exhibition, and interstate movement.
  – Registered goats can use breed registry tattoos instead of tags
  – Owner keeps records of all animals sold for 5 years including:
    - official identification number, Breed, sex, date official identification was applied, date animal was acquired or year of birth if natural addition, name/address of previous owner (if applicable), date sold, name/address of buyer
Sheep and Goats

• All sheep require official ID, EXCEPT
  o Sheep under 18 months of age in slaughter channels
  o Castrated sheep under 18 months of age

• All goats require official ID, EXCEPT
  o Low-risk commercial goats** exempted by the State in which they reside
  o Goats in slaughter channels
  o Castrated goats
Sheep and Goat ID

- Producer needs to have NM sheep/goat brand from NMLB, then can contact USDA NM for scrapie tag orders at 505-761-3160
- White plastic or metal tags available free from USDA
- Owner can purchase other approved official tag types
Official Identification: Horses

- Horse import requirements differ by state, New Mexico requires individual identification, ICVI and Equine Infectious Anemia (EIA or Coggins test) within 12 months for interstate movement.

- Equine identification:
  - USDA “840” ISO 11784/11785 microchip distributed through NMLB and accredited veterinarians, or non-ISO before 2/26/2014
  - A description sufficient to identify the individual equine including, but not limited to, name, age, breed, color, gender, distinctive markings, and unique and permanent forms of identification when present (e.g., brands, tattoos, scars, cowlicks, blemishes or biometric measurements).
  - Digital photographs sufficient to identify the individual equine
Official ID for Cattle: AIN or 840 tags

- “840” tags: United States origin animals
  - 15 digit unique number beginning with 840 (900 series tags being phased out, official if placed before March 11, 2015)
  - 840 tags can only be applied to cattle born in the US
- Three types of 840 tags:
  - Radio Frequency Identification Devices (RFID)
  - Visual “bangle” tags
  - RFID/Visual tags: Bangle tag and RFID
Official ID for Cattle: Brucellosis Vaccination Tags

- Orange Brucellosis or “Bangs” tags
  - Applied by accredited veterinarian when vaccinate calves for Brucellosis, distributed through NMLB
  - Orange metal tag with State prefix (85), followed by “V”, two letters and four digits
  - Orange RFID, orange 840 coded tags applied at vaccination, can be used as official identification tag for movement
Official Cattle ID: Silver, Brite or NUES metal Tags

- NUES tags two types: National Uniform Eartagging System tags
  - 9 digit tags with 85 coded for NM applied by accredited veterinarians or federal or state agriculture in regulatory use
  - 9 digit tags with NM code distributed to producers by NMLB
**Official ID: Swine**

- Official eartags (metal, RFID), Pink premise plastic tag for cull sows and boars-used for ICVI's, test charts
- Slap tattoos - used on feeder swine:
  - used by producers to ID feeder swine, auction markets and collection stations to ID slaughter swine
- Backtags, USDA premises tags - animals moving in slaughter channels
- Registration tattoo - ICVI's, test charts
Official ID: Poultry

- Producer participation in the National Poultry Improvement Plan (NPIP) allows poultry to move interstate through the production cycle as a group using VS Form 9-3
- Leg Bands, group/lot ID - used on ICVI's
Official ID: Backtags in Slaughter Channels

- Applied only to animals sold **directly to slaughter**
- Applied by livestock markets and slaughter facilities
Interstate Certificate of Veterinary Inspection

• Interstate Certificate of Veterinary Inspection (ICVI) – “An official document issued by a Federal, State, Tribal, or accredited veterinarian, certifying the inspection of animals in preparation for interstate movement…”

• ICVI must show:
  – species, must list official ID #s for each animal or group of animals
  – number of animals covered,
  – purpose for which being moved,
  – address where loaded for interstate movement,
  – address of destination,
  – names of consignor and consignee,
  – Consignor and consignee addresses, if different from the loading or destination address.
References for Animal Disease Traceability

- NMLB website and brochures: https://www.nmlbonline.com/
- Scrapie Eradication Program:
- USDA APHIS ADT website:
- South Dakota Animal ID website: https://aib.sd.gov/officialid.html
Scrapie Eradication Program Update

- Use of Genotyping in flocks to determine animals that are at lower risk for infection and development of clinical disease with Scrapie prion exposure
- Live animal test using collection of rectal mucosal to screen for Scrapie prion in lymphoid tissue of mucosa
- APHIS/NMLB Program available to New Mexico sheep and goat flock owners
- Contact NMLB, Dr. Alexandra Eckhoff, to discuss genotype testing of flock and rectal mucosal biopsy of susceptible genotype animals up to 30 in one flock
Breed and Sex Predispositions?

Breed

- The black face meat breeds such as Suffolk, Hampshire and Shropshire have the highest scrapie prevalence in the United States
  - about 1 in 300 verses 1 in 5000 for white face wool sheep.
- The white face meat breeds, such as Southdowns and Montadales, may have a higher prevalence than white face wool sheep.
Transmissible Spongiform Encephalopathy (Scrapie): Etiology
~ How an Infectious Prion Causes Disease ~

• PrP<sub>D</sub>
  - Causes the normal cellular version of the protein, PrP<sub>C</sub>, to change into its shape.
  - The altered protein can no longer be completely degraded by the cell.
  - Additionally, the altered protein is now capable of converting normal cellular prion proteins.
  - These altered proteins accumulate in the cell:
    - Cell function is impaired; and then
    - The cell dies.
What Characterizes TSE Diseases?

• Universally fatal

• Long (2.5+ years) incubation period
  - Insidious disease – an infected animal can appear normal for several years while spreading the disease to others

• Progressive debilitating neurological illness
  - Brain degeneration, often with vacuolation

• Infectivity very hard to inactivate
Clinical Signs (variable) including:

- **Neurological behaviors**
  - Loss of coordination*
  - Lip smacking
  - Gait abnormalities (Bunny hopping/walking on eggshells)

- **Changes in behavior**
  - Hypersensitivity to noise or movement
  - Scratching and rubbing

- **Weight loss**
- **Weakness, unable to rise**
- **Death, possibly sudden**

*Most common clinical sign observed*
Transmission

Transmitted horizontally by ingestion, ocular exposure, or contact with abraded skin or mucus membranes

- Typically, young lambs or kids through contact with the infected placenta and/or birth fluids from infected ewe(s) or doe(s) – not necessarily mother to offspring - or with contaminated lambing areas

**Scrapie is not an inherited disease.**

*However* . . .
Transmission
~ Impact of Genetics ~

The genetics of sheep affects their susceptibility.

- Sheep and goats have variations – called polymorphisms – in the make-up of the gene that codes for PrP<sup>C</sup>.
- Sheep with certain polymorphisms are more susceptible to developing scrapie if exposed to the agent.
  - In the U.S., sheep that are QQ at codon 171 of the PrP<sup>C</sup> gene are most susceptible to the strain of classical scrapie predominant in this country (valine independent scrapie).
  - Sheep that are either AV or VV at codon 136 of the same gene are more susceptible to a less common strain of classical scrapie found in this country (valine dependent scrapie).
National Scrapie Eradication Program

- Cooperative program of the federal gov’t, states and industry to eradicate this disease from the U.S.

- Elements of the National Scrapie Eradication Program
  - **Accelerated Scrapie Eradication Program**
    - Mandatory – applies to all sheep and goat producers in the U.S.
    - Identifies pre-clinical sheep through live-animal testing and slaughter surveillance
    - Identification requirements to allow our epidemiologists to traceback an infected animal to its original source of infection
    - Indemnity for destruction of high-risk, suspect and scrapie-positive sheep and goats
    - Genetic testing to increase resistance in the national flock
  
  - **Scrapie Flock Certification Program**
    - Voluntary
How Are TSEs Diagnosed?

• There are no blood, urine or fecal tests

• Live-animal tests
  ➢ In the U.S., only approved for use in the scrapie program.
  ➢ Lymphoid Tissue from the rectal mucosa

• Postmortem tests
  ➢ Brain/spinal cord
  ➢ Lymphoid tissue, lymph nodes of head
Live Animal Test: Rectal Mucosal Biopsy

*RAMALT*
References

- USDA APHIS Ruminant Health Programs presentations
Questions?

• Thank you!
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• 505-761-3125
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• Jamie Wells, Program Assistant