Biosecurity and You: Animal Abuse or Animal Disease

Dr. Matt Hersom
Extension Beef Cattle Specialist
University of Florida
What are we really talking about?

• Food Production
  • Meat and Milk
  • Food Safety
• Animal Ownership
  • Production
  • Leisure
• Protection of Animal Industries
• Protection of Economy
The state of Florida has a long and colorful history of cattle ranching.

Currently, there are
- 5.4+ million acres of pasture and rangeland, representing 15.6% of the state’s total land area, used predominantly for beef and dairy cattle production.
- As of January 2018, Florida had an inventory of 1.63 million cattle and calves, including 886,000 beef cows.
- Florida’s cattle contribute 231 million pounds of beef annually. Which is the equivalent of 334 million meals to consumers.

According to a UF/IFAS report, in CY 2017, for all Florida cattle industry groups and activities, statewide economic contributions included:

- **118,191** full-time and part-time jobs,
- **$16.8 billion** in industry output or revenues,
- **$7.65 billion** in value added or Gross State Product, and
- **$4.64 billion** in labor income (employee wages, salaries, benefits, business owner income).

In addition, the industries contributed:

- **$712 million** in state and local government tax revenues and
- **$1.16 billion** in federal tax revenues.

Hazard vs. Risk

Hazard
is the potential
to cause harm

Risk
is the likelihood of harm
taking place based on exposure

Example: Salmonella in egg is a hazard
- if eaten raw, Salmonella bacteria may be present
- the likelihood of exposure is higher
- the risk of illness is high
- correct food handling for instance cooking thoroughly kills Salmonella bacteria
- the likelihood of exposure is lower
- the risk of illness is low

Hazard in foods can be...
- physical: for instance pieces of bones in fish products
- biological: for instance harmful bacteria, viruses or parasites
- chemical: for instance mercury in fish or acrylamide in starchy food

Risk
is determined by the exposure...
- how much
- how long
- how often

...to a hazard
without exposure, there is no risk
What are we really talking about?
Hazards and Risks

**Hazard**
- Something that can cause harm

**Risk**
- The chance that any hazard will actually cause harm
- Risk assessments to identify what hazards exist, and how likely these hazards are to cause harm.
- Then decide what prevention or control measures are needed.
Global Travel and Commerce

- Increase in personal travel
- Spread of foreign animal disease
  - Within a food product
  - On the traveler’s person
- Importation of animals and animal products
  - Animals may not show signs of disease
- International travel waste
Global Travel and Commerce

Enter the U.S.

Global Air Travel
- 730 Million People Yearly

People
- 1.4 Million Daily
- 500 Million Annually

Animals
- Greater than 38,000 Daily

Trucks
- 11.2 Million Annually

Rail Cars
- 2.2 Million Annually

Foreign Ships
- 7,500 Make 51,000 Calls Annually

References: CDC and APHIS
Vulnerability – ports of entry

Gulf of Mexico
770 miles of coastline

Atlantic Seaboard
580 miles of coastline

Florida is 361 miles
East to West

Florida is 447 miles
North to South
Vulnerability - Animals

• 26 million poultry
• 1.5 million beef cattle
• 350,000 horses
• 140,000 dairy cattle
• 100,000 swine
• 30,000 goats
• 10,000 sheep
• Millions and millions of pets
Routes of Transmission
Routes of Transmission

- Apply to all infectious agents
- Animal must be exposed to develop disease
- Understand different routes of transmission = Gain control
- Risk areas must be identified
- Design protocols to minimize exposure
Routes of Transmission

• Spread of disease agents
  • Animal to Animal
  • Animal to Human

• Different Routes of Transmission
  • Aerosol
  • Direct contact
  • Fomite
  • Vector
  • Zoonotic

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Aerosol Transmission

• Disease agents contained in droplets
  • Pass through air
• Most agents not stable in droplets
  • Close proximity required
  • Infected and susceptible animals
Aerosol Transmission

- Infected droplets passed through the air from an animal to a person
  - Sneeze/cough
  - Birthing tissues
  - Fecal material
  - Urine
  - Contaminated soil
Aerosol Transmission

• Anthrax
• Listeriosis
• Melioidosis*

• Q Fever
• Rift Valley Fever*
• Tuberculosis

Wear an N-95 mask when:
- Handling infectious animals or their tissues
- Assisting with calving
- Power washing

* Denotes Foreign Animal Disease
Direct Contact Transmission

• Disease agent in animal or environment
  • Open wounds, mucous membranes, skin
  • Blood, saliva, nose to nose, rubbing, biting

• Reproductive transmission
  • Breeding
  • Dam to offspring
Direct Contact or Fomite Transmission

- Anthrax
- Brucellosis
- Dermatophilosis $^F$
- Leptospirosis
- Melioidosis $^*$
- Pseudocowpox $^F$
- Q Fever
- Rabies
- Ringworm $^F$
- Rift Valley Fever $^*$
- *Salmonella*
- Tuberculosis
- Vesicular stomatitis

$^*$ Denotes Foreign Animal Disease
$^F$ Denotes fomite transmission
Fomite Transmission

• Contaminated inanimate object
• Carries agents to other animals
  • Brushes, needles
• Traffic
  • Vehicle, trailer, humans
Direct Contact, Fomite Prevention Practices

- Basic prevention steps involve:
  - Maintaining good personal hygiene
  - Wearing personal protective equipment (PPE)
  - Keeping equipment clean
Oral Transmission

• Consumption of contaminated feed, water
  • Feces, urine, saliva
  • Other contaminants (ruminant protein)
• Licking/chewing contaminated environment
Vector-borne Transmission

• Insect
• Acquires pathogen from one animal
• Transmits to another animal
  • Biological vectors
    • Fleas, ticks, mosquitoes
  • Mechanical vectors
    • Flies, cockroaches
Environmental Contamination

- Disease organism in environment
  - Survive in soil, organic material
- Animals and humans can acquire agent(s) through:
  - Inhalation
  - Direct contact
  - Fomites
  - Oral consumption
  - Vectors
Disease Transmission

- Animals may not exhibit obvious signs of disease
- Awareness of all routes of transmission is essential
- Develop strategy to minimize disease risk for livestock operation
Identification of Disease and Sickness
Symptoms of disease and sickness

**Symptoms**
1. Skin lesions
2. Hair loss
3. Panting/labored breathing
4. Drooling
5. Muscle spasms
6. Nasal discharge
7. White membranes
8. Bloody discharge
9. Thin
10. Uncoordinated movement
11. Elevated temperature
12. Rapid heart rate
13. Excessively fat
14. Diarrhea
15. Dark urine

**Disease Category**
- **Respiratory**
  - 3, 6, 7, 8, 11, 12
- **Metabolic**
  - 1, 4, 5, 9, 11, 12
- **Internal Parasites**
  - 1, 2, 7, 9
- **External Parasites**
  - 1, 2
- **Poisonous Plant**
  - 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 14, 15
- **Insect Vector**
  - 10
<table>
<thead>
<tr>
<th>Foreign Animal Disease</th>
<th>Animal Affected</th>
<th>Highly Contagious</th>
<th>Vector Borne</th>
<th>Zoonotic Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diseases with Preparedness and Response Plan (Red Books)</td>
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<td></td>
</tr>
<tr>
<td>HPAI – Highly Pathogenic Avian Influenza</td>
<td>Avian, others</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>CSF – Classic Swine Fever</td>
<td>Swine</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>FMD – Foot and Mouth</td>
<td>All cloven hoofed animals</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>vND – virulent Newcastle Disease virus</td>
<td>Avian</td>
<td>Yes</td>
<td>No</td>
<td>Yes, minor</td>
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<td></td>
<td>Diseases with FAD PReP Disease Response Strategies</td>
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<td></td>
<td></td>
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<tr>
<td>ASF – African Swine Flue</td>
<td>Swine</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Japanese Encephalitis</td>
<td>Equine, Swine</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Pest des petits ruminants</td>
<td>Caprine, Ovine</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Rift Valley Fever</td>
<td>Bovine, Ovine, Caprine</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
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<td></td>
<td>Other FAD Threats</td>
<td></td>
<td></td>
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<tr>
<td>African Horse Sickness</td>
<td>Equine</td>
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<td>Akabane</td>
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<td>Yes</td>
<td>No</td>
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<tr>
<td>Bovine Babesiosis</td>
<td>Bovine</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Contagious Bovine Pleuropneumonia</td>
<td>Bovine</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Contagious Caprine Pleuropneumonia</td>
<td>Caprine</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Dourine</td>
<td>Equine</td>
<td>No</td>
<td>No</td>
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</tr>
<tr>
<td>Glanders</td>
<td>Equine</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Heartwater</td>
<td>Ruminants</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Lumpy Sine Disease</td>
<td>Bovine</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Foreign Animal Disease Investigations

African swine fever outbreak alarms wildlife biologists and veterinarians

Risk of exposure to legal imports of swine products.

The graduated color map represents the risk from the highest (darker) to the lowest (lighter) of US susceptible swine populations being exposed to the legally imported swine products.

Risk Exposure to Products

- 4.4e-005 - 5.3e-005
- 5.4e-005 - 1.5e-003
- 1.0e-003 - 4.1e-003
- 4.2e-003 - 1.5e-002
- 1.6e-002 - 2.3e-002

doi: https://doi.org/10.1371/journal.pone.0182850.g005
Response Zones for Disease Outbreak

- **Infected Zone**: 1.86 m / 3 km
- **Buffer Zone**: 4.35 m / 7 km
- **Surveillance Zone**: 6.21 m / 10 km
- **Control Area**
Factors Used to Determine Control Area Size

<table>
<thead>
<tr>
<th>Factors</th>
<th>Additional Details</th>
</tr>
</thead>
</table>
| Jurisdictional areas | • Effectiveness and efficiency of administration  
• Multi-jurisdictional considerations: local, State, Tribal, and multistate |
| Physical boundaries | • Areas defined by geography  
• Areas defined by distance between premises |
| FAD epidemiology | • Reproductive rate  
• Incubation period  
• Mode of transmission (such as fecal-oral, droplet, aerosol, vectors)  
• Survivability in the environment  
• Ease of diagnosis (for example, no pathognomonic signs; requires diagnostic laboratory testing)  
• Virus susceptibility |
| Infected Premises characteristics | • Number of contacts  
• Number of premises  
• Animal movement  
• Species of animals  
• Extent of animal movement  
• Age of animals  
• Movement of traffic and personnel to and from premises ( modo spread)  
• Biosecurity measures in place at time of outbreak |
| Contact Premises characteristics | • Number of premises  
• Percentage of premises in area or region  
• Movement of traffic (fomites) and personnel to and from premises (fomite spread)  
• Biosecurity measures in place prior to outbreak |
| Environment | • Types of premises in area or region  
• Land use in area or region  
• Susceptible wildlife and population density  
• Wildlife as biological or mechanical vectors |
| Climate (for aerosol spread diseases) | • Prevailing winds  
• Humidity |
| General area, region, or agricultural sector biosecurity | • Biosecurity practices in place prior to outbreak  
• Biosecurity practices implemented once outbreak detected |
| Number of backyard or transitional premises | • Types of premises, animal movements, and network of animal and fomite movements |
| Continuity of business | • Continuity of business plan and processes in place or activated at beginning of outbreak (such as surveillance, negative pre-diagnostic tests, premises biosecurity, and risk assessments)  
• Permit processes, memorandums of understanding, and information management systems in place or activated at beginning of outbreak |

<table>
<thead>
<tr>
<th>Zone/Area</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infected Zone (IZ)</td>
<td>Zone that immediately surrounds an Infected Premises.</td>
</tr>
<tr>
<td>Buffer Zone (BZ)</td>
<td>Zone that immediately surrounds an Infected Premises or a Contact Premises.</td>
</tr>
<tr>
<td>Control Area (CA)</td>
<td>Consists of an Infected Zone and a Buffer Zone.</td>
</tr>
<tr>
<td>Surveillance Zone (SZ)</td>
<td>Zone outside and along the border of a Control Area. The Surveillance Zone is part of the Free Area.</td>
</tr>
<tr>
<td>Free Area (FA)</td>
<td>Area not included in any Control Area. Includes the Surveillance Zone.</td>
</tr>
</tbody>
</table>
## FAD vs Endemic Diseases

- **Endemic livestock diseases in cattle, swine, poultry, equine** likely single largest cause of financial loss in agriculture and adversely affect animal well-being and trade.

- Distinguishable from FAD because they are constant problem with little public, policy and “just part of animal ag”.

<table>
<thead>
<tr>
<th>Eqiane</th>
<th>Bovine</th>
<th>Swine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contagous E. Metritis</td>
<td>Tuberculosis</td>
<td>Brucellosis</td>
</tr>
<tr>
<td>East/West Encephalitis</td>
<td>Brucellosis</td>
<td>Pseudorabies</td>
</tr>
<tr>
<td>E. Herpes Virus</td>
<td>BSE</td>
<td></td>
</tr>
<tr>
<td>E. Infectious Anemia</td>
<td>Johnes Disease</td>
<td>Influenza A Virus</td>
</tr>
<tr>
<td>E. Piroplasmosis</td>
<td>New World Screwworm</td>
<td></td>
</tr>
<tr>
<td>E. Viral Arteritis</td>
<td>Trichomoniasis</td>
<td></td>
</tr>
<tr>
<td>Vesicular Stomatitis</td>
<td>Vesicular Stomatitis</td>
<td></td>
</tr>
<tr>
<td>West Nile Virus</td>
<td>B. Leukemia</td>
<td></td>
</tr>
</tbody>
</table>

[Link](https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information)
What Is Biosecurity?

The protection of the economy, environment, and health of living things from diseases, pests, and bioterrorism.
1\textsuperscript{st} step in biosecurity

Risk Assessment

- Has to be developed specific to the situation
- One size does not fit all!

Look at

- Animal risk factors
- Feed and water risk factors
- Owner and employee risk factors
- Visitor risk factors
- Premise risk factors
Three Components to Biosecurity

- Isolation
  - Prevents contact between animals
- Traffic Control
  - Vehicles, animals, people, etc.
- Sanitation
  - Disinfection of materials, people and equipment
Isolation

- Most important step in disease control
- Limit contact and co-mingling
- Can be difficult during a disaster – but very important!
- Especially important is to isolate sick animals
- Use of common or unclean equipment negates isolation.
Traffic control

• What are the points of entry
• Consider types of traffic
  • Animals
  • Vehicles
  • Farm equipment
  • People
  • Other animals…pets, wildlife, etc.
• Prevention
  • Gates, locks, fences, barriers, signs
Sanitation

- Maintain the cleanliness of people and equipment
- Regularly clean objects that come in contact with animals or animal fluids
- Disinfect things entering the ranch (vehicles, equipment, people)
- Clean facilities between groups of animals
Sanitation

• Need to consider the prior stops of deliveries
  • Fuel
  • Feed
  • Cattle trucks
    Where do the vehicles go?
• What is the level of cleanliness/disinfection
• Prevention
  • Footbaths, disposable boots, change of clothes
Sanitation

• People
  – Transfer of pathogens on shoes, clothes

• Equipment
  – Don’t use same equipment for feed and manure
  – Clean equipment after potential contamination

• Clean facilities between groups of cattle
  – Clean environment for working
  – Reduce transfer of pathogens
Biosecurity – Enterprise Security

- Protection of the Agricultural enterprise from external pressures who’s goals are to:
  - Alter management practices
  - “Free the animals”
  - Destroy facilities and equipment
  - Stop modern agriculture practices – GMO’s
  - Bring harm to individuals associated with ag enterprises

**Agroterrorism**

- PETA, ALF, ELF, Greenpeace, foreign countries
Biosecurity — Enterprise Security

- Isolation, Traffic Control, Sanitation
- Employee Screening
- Employee Training
- Assessment of Situation
- Vigilance to Security Measures
- Florida is a “Sentinel State”
Why have a biosecurity plan

- To prevent economic loss caused by production loess
- To prevent theft of animals, machinery, or equipment
- To protect wholesome image of agricultural/food products and protect market access
- Prevent or minimize an interruption in cash flow
- Create awareness of potential harm from individuals and begin prevention
General Prevention Steps

Personal hygiene
• Wash hands after handling animals
  • Removes the infectious agent

Personal protective equipment
• Gloves, coveralls, boots
• Mask, goggles
Personal Protective Equipment

- Special clothing and equipment that places a barrier between an individual and a hazard
- Prevents the spread of hazards between animals and locations
Cleaning and Disinfection

**Cleaning**
- Removal of organic material

**Washing**
- Removal of materials that can inhibit the action of disinfection

**Disinfection**
- Process that destroys most pathogenic and non-pathogenic microorganisms to an acceptable level
Practical PPE Items

- Disposable boots
- Rubber boots
- Latex/rubber gloves
- Coveralls
- Safety glasses/goggles/face shield
- N95 mask
- Brush
- Hand sprayer
- Bleach/Disinfectant
- Bucket
- Paper Towels
- Garbage Bag
Zoonotic Diseases of Cattle Present in the U.S.

- Anthrax
- Brucellosis
- Cryptosporidiosis
- Dermatophilosis
- *E. coli*
- *Giardia*
- Leptospirosis

- Listeriosis
- Pseudocowpox
- Q Fever
- Ringworm
- *Salmonella*
- Tuberculosis
- Vesicular stomatitis

Center for Food Security and Public Health Iowa State University 2005
Before entering a premises DO:

- Park your vehicle away from site production facilities
- Ensure that your vehicle’s tires, wheel wells, and undercarriage have been cleaned.
- Designate separate “clean” and “dirty” zones in your vehicle. The “clean” zone is usually the passenger compartment. The “dirty” zone is usually the trunk or cargo zone.
- Put on clean coveralls, boots, hat, gloves, and other required apparel.
- Wash your hands with soap and water.
- Consult with the owner to establish an arbitrary line on the site to demarcate the “clean” side of the premises from the “dirty” side. This will usually be somewhere along the driveway or in the parking zone.

Note: Additional biosecurity and cleaning and disinfection procedures are required to address the risks posed by suspected and confirmed foreign animal diseases and serious zoonotic diseases. This includes the creation of work zones for proper entry and exit from a contaminated zone.
General Biosecurity Guidelines – Don'ts

**Enter**

Enter a “clean” zone of either a premises or vehicle unless you have disposed of or cleaned and disinfected all clothes, footwear, hats, gloves, equipment, supplies, and other sources of pathogen transmission.

**Attempt**

Attempt to disinfect a surface unless it first had been thoroughly cleaned (i.e., it is free of all visible organic material).

**Drive**

Drive your vehicle onto premises any more than necessary. Use an on-site vehicle for on-site transportation whenever possible.
General Biosecurity Guidelines

Before LEAVING a premises DO:

- Use a brush and an approved disinfectant to thoroughly clean and disinfect all reusable clothing and equipment, including personal items.
- Clean vehicle exteriors and trailers, including tires, wheel wells, and the undercarriage, with soapy water and/or take them through a pressure car wash.
- Place disposable coveralls (turned inside out), boots, and other used items in a plastic bag to leave on the premises or to transport in the “dirty” zone of your vehicle.
- Dispose of disinfectant solution according to label directions.
- Dispose of all plastic garbage bags containing used or contaminated supplies in a manner that prevents exposure to other people or animals.
- Wash your hands with soap and water.
- Clean and/or launder all reusable equipment and clothing.
- At the end of the day, take a shower and clean all personal items.
General Biosecurity Guidelines

DON’T:

- Bring “dirty” paperwork into the clean zone of your vehicle.
- Visit a second premises before complying with appropriate biosecurity protocol.
- Follow the incident specific Biosecurity Plan for guidance on waiting periods between visits to susceptible sites.
- The waiting period may vary based on the disease, the premises designation, the task assignment, and the level of biosecurity practiced.
Animal Abuse
Laying the ground works: what is necessary

• Five Freedoms
  1. Freedom from hunger and thirst
  2. Freedom from discomfort
  3. Freedom from pain, injury, or disease
  4. Freedom to express normal behavior
  5. Freedom from fear and distress
Animal Abuse Nutritional
Animal Abuse - Physical

https://animalaidunlimited.org/blog/cow-rescued-whose-halter-was-cutting-into-her-nose/

ON [REDACTED] DURING THE FRESH PURSUIT AND APPREHENSION OF THREE STOLEN CAR SUSPECTS A HOG PEN AT THE ABOVE LOCATION WAS LOCATED. THE THREE SUSPECTS WERE TRACKED BY A K-9 UNIT TO THE PEN WHERE THE SUSPECTS WERE LOCATED UNDER THE PEN. UPON APPROACHING THE PEN SEVERAL DEAD HOGS WERE WITNESSED IN AND AROUND THE PEN. OVER 50 BUZZARDS WERE OBSERVED ON THE PEN AND EATING ON ONE OF THE DEAD HOGS. UPON REVIEWING THE PEN 8 HOGS WERE FOUND IN DIFFERENT STAGES OF DECOMPOSITION. ON HOG WAS FOUND TO BE IN THE STAGES OF IMMEDIATE DEATH DUE TO AN UNKNOWN ILLNESS THAT WAS CAUSING THE HOG TO SHAKE CONTINUOUSLY LAYING ON ITS SIDE. AGRICULTURE SUPERVISION WAS NOTIFIED. THE SHERIFF’S OFFICE VETERINARIAN WAS ALSO NOTIFIED OF THE INCIDENT. THE HOG WAS EUTHANIZED DUE TO THE UNDUE SUFERING OF THE ANIMAL. 7 HOGS WERE LOCATED IN THE PEN ALIVE. THE HOGS DID NOT HAVE ANY WATER AVAILABLE IN THE PEN. THERE WAS ONE BARREL WITH APPROXIMATELY 1/2 GALLON OF ROTTEN MILK AND ANOTHER WITH APPROXIMATELY 1 GALLON OF AN UNKNOWN SUBSTANCE (ROTTEN FOOD) THE HOGS WERE OBSERVED SEVERAL TIMES EATING ON THE DEAD HOGS LOCATED IN MULTIPLE SPOTS IN THE PEN. PHOTOGRAPHS OF THE HOGS WERE TAKEN AND PLACED IN SHERIFF’S OFFICE RECORDS.

INVESTIGATION:

ON 12/20/2013 @ 0955 HOURS A NECROPSY WAS PERFORMED ON THE HOG THAT WAS EUTHANIZED DURING THIS INVESTIGATION. THE NECROPSY WAS PERFORMED BY DOCTOR OF THE SHERIFF’S OFFICE ANIMAL CONTROL SECTION. THE MALE (BAR) HOG WEIGHING APPROXIMATELY 55 POUNDS WAS FOUND TO HAVE ABSCESSSES COVERING THE OUTER LAYERS OF THE HOGS LUNGS AND LIVER. THESE ABSCESSSES ARE A CLEAR INDICATION OF THE HOG HAVING SEVERE PNEUMONIA. THE HOG’S HEART WAS NOT UNIFORM IN SHAPE INDICATING POSSIBLE WHITE MUSCLE DISEASE. THIS DISEASE IS FOUND IN HOGS THAT EAT AN IMPROPER DIET. THE STOMACH CONTENT OF THE HOG WAS MADE UP OF SMALL GREEN PEAS AND A SMALL GRAIN TYPE SUBSTANCE. PHOTOGRAPHS OF THE NECROPSY WERE TAKEN AND SUBMITTED TO SHERIFF’S OFFICE RECORDS. A COPY OF THE VETERINARIAN REPORT IS ATTACHED AS A PAGE OF THIS INVESTIGATIVE REPORT.

ON 12/20/2013 THE 7 REMAINING ALIVE HOGS WERE TAKEN TO THE ANIMAL AUCTION IN FLORIDA AND SOLD TO THE HIGHEST BIDDER. NO FURTHER INVESTIGATION REGARDING THIS CASE AT THIS TIME.
### Animal Handling

<table>
<thead>
<tr>
<th>Stop and think!</th>
<th>Have at least 12% of a plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work slow</td>
<td>Unfamiliar area, people, situations</td>
</tr>
<tr>
<td>They are bigger, stronger, faster</td>
<td>Body weight, horns and hooves, four legs</td>
</tr>
<tr>
<td>Most LEO equipment and animals are not compatible</td>
<td>Lights and sounds</td>
</tr>
<tr>
<td>Are you equipped and/or capable</td>
<td>Training and tools</td>
</tr>
</tbody>
</table>
Livestock Characteristics

- Easily distracted
- Poor depth perception
- Shadows startle
- Footing
- Gregarious – Circling behaviors

- 5 senses
  - Vision
  - Hearing
  - Smell
  - Touch
  - Taste
Cattle Vision

- Blind spot shaded red
- Edge of flight zone
- Handler position to stop movement
- Handler position to start movement
- Point of balance
Capturing Sound
### Animal Behaviors

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Ingestive</td>
<td>Eating/drinking</td>
</tr>
<tr>
<td>Eliminative</td>
<td>Feces/urine, avoid those areas in pastures</td>
</tr>
<tr>
<td>Play</td>
<td>Important for wellbeing</td>
</tr>
<tr>
<td>Investigative</td>
<td>Curiosity, varies</td>
</tr>
<tr>
<td>Vigilance</td>
<td>Group function</td>
</tr>
<tr>
<td>Social Facilitation</td>
<td>Herd animals do the same thing</td>
</tr>
<tr>
<td>Care-giving</td>
<td>Mutual grooming, fly swatting</td>
</tr>
<tr>
<td>Care-seeking</td>
<td>Signal for care and attention</td>
</tr>
<tr>
<td>Agonistic</td>
<td>Aggressive types of interaction</td>
</tr>
<tr>
<td>Sterotypic</td>
<td>Oral, locomotive</td>
</tr>
</tbody>
</table>
How can we accommodate the horse’s nature in our management? – Regarding safe handling

• Most horses spook...fairly often

• Most horses will panic in situations that may not seem logical to us...1000 lbs of panic is dangerous

• Learn to think like a horse and you can avoid the majority of “normal” horse accidents
Large Animal Handling Equipment

- Rattle paddle, flag, cane
- Feed bag
- Length of rope
- Rope/nylon halter
- Plastic bucket
- Cattle panels / chute
- Other restraints
- Patience
Videos you don’t want to be part of

• Arizona Llamas
  https://www.youtube.com/watch?v=81HOHEfuKic

• Florida Bulls
  https://www.youtube.com/watch?v=TbCgVzVljTo

• Canadian Cow
  https://www.youtube.com/watch?v=4AEqglZ_x1k

• California
  • http://youtu.be/yszdWSLoJjk

• Oklahoma
  • http://youtu.be/dFnRZXd2fQ4

• Alabama
  • http://youtu.be/5EG6CzjQRpl
Weight Estimation

• Method of Measurement
  • measure from point of shoulder to the buttocks
  • measure girth just behind front legs
  • measure in inches to calculate weight in pounds

Equine Bodyweight = \frac{\text{Heart girth (in inches)} \times \text{heart girth (in inches)} \times \text{length (in inches)}}{330} (lbs)
Weight Estimation, cont’d

• Use of a weight tape to determine horse’s body weight
Pertinent Areas of the Horse for Body Condition Scoring

- Behind the shoulder
- Ribs
- Along the neck
- Along the withers
- Crease down back
- Tailhead
Assessment points for visual evaluation of body condition score
Check List for Recovery

1. Supply adequate water
2. Determine body weight
3. Meet dry matter intake requirement
   1. Medium to high-quality hay
4. Introduce supplement that meets requirements
   • Energy
   • Protein
   • Vitamin - Minerals
Check List for Recovery cont.

5. Increase supplement intake over time
   • One to two pounds per week
   • This will take time
   • BCS 2 to 3 could take ≤ 90 days
     • 14 lbs bahiagrass hay, 5 concentrates
   • BCS 3 to 4 could take ≤ 100 days
     • 14 lbs bahiagrass hay, 5 concentrates
     • To do it faster = professional
Livestock Education & Certification for Agriculture Law Enforcement
What is the LECALE Program

• Livestock-based education specifically designed for law enforcement-attorney-Dept. Ag
• Classroom and field learning experience
• Continuing education opportunity for law enforcement
• Multi-species, agriculture related education
• Accreditation provided
Who is Behind LECALE?

• University of Florida IFAS Extension
  • State and County Faculty

• Florida Farm Bureau
  • State and County Association

• County Sheriff Deputies
  • Multiple counties

• Florida Dept. of Agriculture and Consumer Services
Benefits of LECALE Program

• Rigorous and Relevant training curriculum
• Accreditation through UF-IFAS and FFB Agriculture Education Services and Technology
• Local delivery for classroom and field content
• Subject matter experts
• Involvement of law enforcement to develop curriculum
• Immediate follow-up with training
• Cost and time effective
LECALE Objective

The objective of the LECALE program is to provide law enforcement, litigation attorney, and Dept. of Ag personnel with:

1. knowledge regarding generally accepted livestock production practices
2. skills to discern acceptable animal well-being
3. ability to apply acquired knowledge and skills in the field and during litigation proceedings
LECALE Details December 9-13, 2019

Registration:
• Attendees can register via EventBrite by following this link
  • Search EventBrite: lecale
• Go to:
  [http://animal.ifas.ufl.edu/beef_extension/index.shtml](http://animal.ifas.ufl.edu/beef_extension/index.shtml)

Registration Fee: $349.99 for all participants regardless of affiliation. (Includes: refreshment breaks, lunches, course material, and certification fee).
• The class will be limited to the first 25 registrants.
• Contact:
  • hersom@ufl.edu
  • 352-392-2390
So What Do We Do?

- Training
- Education
- Practice
- Respond