This year’s topic:

Health Care Management

Body parts
Restraint & knot tying
Animal ID methods & procedures
Recognizing & preventing illness
Health supplies
Injections
Internal & external parasites
Disease ID
Weight estimation
Medication label ID
Withdrawal times & medical calculations
Earning Premier Exhibitor Points

- Attend the PE Field Day (November)
- Attend the PE Workshop (Yay, you’re here!😊)
- Make an educational poster – Mandatory!
- Skill-a-Thon and Knowledge Test
ANIMAL HEALTH MANAGEMENT

What does that mean to you?
Animal Health Management

- It is our RESPONSIBILITY to ensure the health of our animals
  - Failure to do so impacts the animal AND the humans consuming the end-product of the animal

- Disease = departure from health
  - Infectious disease
  - Non-infectious disease

What do you notice about this steer?
Animal Health Management

Infectious Disease

• Infectious agents
  • Bacteria, viruses, fungi, prions, protozoa, parasites

• May be contagious
  • Routes of transmission
    • Direct contact: diseased animal physically touches or is in very close contact with another animal
    • Indirect contact: disease is transmitted by a third party or mechanically
      • Feeders, waterers, human clothing, farm equipment, biting insects, wild animals

• Vehicles of transmission
  • Saliva, nasal discharge, sexual contact, pus, feces, blood, through the air
Animal Health Management

Non-infectious disease

- Malnutrition, trauma/injury, cancer, genetic defects
- Environmental hazards: toxins, poisons, effects of extreme weather conditions
What can/do we do to maintain the health of our livestock animals?
METHODS OF ANIMAL IDENTIFICATION
Why do we ID animals?

- Proper animal ID is essential for efficient execution of normal management practices
  - More recently Bioterrorism and Disease Prevention
  - Disease traceability
- National Animal Identification System (NAIS)
  - Cattle crossing state lines must be officially identified and be accompanied by an Interstate Certificate of Veterinary Inspection (ICVI) or other movement document (i.e. health certificate)
  - Swine must be ID’d with a tattoo, ear notching, tag, or transponder
  - Sheep must be ID’d and traceable due to scrapies concerns
    - Official USDA/APHIS Veterinary Service ear tags
    - Premises ID tattoos and breed registration or health certificate during transport
    - Can also be microchipped
Methods of Animal Identification

Ear Tags

- **Plastic Tags – Cattle, Sheep, Pigs**
  - **Advantage:** economical, can be read from a distance, flexible
  - **Disadvantage:** plastics tend to become hard and brittle in the cold, easily lost, pre-numbered tags with large block numbers are difficult to read if they become soiled

- **Metal Tags – Sheep**
  - **Advantage:** durable
  - **Disadvantage:** difficult to read from a distance

Jason Banta - BQA - Putting in an ear tag - YouTube
Methods of Animal Identification

Tattooing

- **Advantage**: permanent and doesn’t disfigure the animal
- **Disadvantage**: animal must be confined in order to read tattoo; tattoos are hard to read on dark-skinned animals

- **Placement**
  - **Cattle**: ears
  - **Sheep**: ears
  - **Swine**: ears, over shoulder, on rump near tail
Methods of Animal Identification

Tattooing Procedure

- [Tattoo Identification of Beef Cattle - YouTube](#)
Methods of Animal Identification

Hot Branding – Cattle

- **Advantage:** easy to read, unique to producer, can be used on any color cattle, permanent
- **Disadvantage:** lowers the market value of the hide, can be difficult to read (especially on haired cattle), stressful procedure for cattle

[Cattle Branding process - YouTube](https://www.youtube.com/watch?v=dQw4w9WgXcQ)
Methods of Animal Identification

Freeze Branding – Cattle

- **Advantage:** permanent, limited hide damage
- **Disadvantage:** takes more time to brand an animal, doesn’t work on white cattle

[Freeze branding cattle - How To Freeze Brand Cattle - Bing video](https://www.bing.com/search?q=freeze+branding+cattle&FORM=HSCS)
Methods of Animal Identification

Paint Branding/Stenciling – Sheep

- **Advantage**: easy to read, can be used on young lambs shortly after birth
- **Disadvantage**: temporary
Methods of Animal Identification

Ear Notching – Sheep, Swine

- **Advantage**: permanent, economical, can be read from a distance

- **Disadvantage**: may disfigure the animal, requires training to read, detracts from appearance of show animals (primarily sheep), difficult to read on sheep breeds with wool on the ears

- **Reading**: Show Pig: How To Read Ear Notches - Bing video

- **Notching**: Kingbird Farm - Pastured Pigs (3 of 4) - Piglet Ear Notching - Bing video
RECOGNIZING ILLNESS
How can we tell if an animal is healthy or not?
Start with NORMAL

What is normal for THIS animal?

How do we know what is “normal”?

• By keeping good records!
  • How much feed does your animal usually eat?
  • How much do they usually drink?
  • What is their energy level and/or temperament normally like?
  • What is their normal body temperature, heart rate, and respiration rate?
  • What is their normal fecal pattern and consistency?
  • Are they making any abnormal sounds?
  • Are they standing as they normally would?
  • Are they moving as they normally would?
### Vital Signs

<table>
<thead>
<tr>
<th>Body temperature</th>
<th>Heart Rate/Pulse</th>
<th>Respiration Rate</th>
</tr>
</thead>
</table>
| • Measured with rectal thermometer  
  • Cattle  
    • 101.5 °F (100.4 – 102.8°F)  
  • Sheep  
    • 102 °F (100.9 – 103.8°F)  
  • Swine  
    • 102 °F (101.5 – 102.5°F)  
| • Measured in beats per minute (bpm)  
  • Cattle  
    • Pulse – Can be felt by hand in the artery under the tail  
    • Heart Rate (HR) – Can be felt under the ribs or listened to with a stethoscope  
    • 50 bpm (40-70 bpm)  
  • Sheep  
    • Pulse – Can be felt by hand between the ribs just behind the elbow OR the femoral artery on the inside of the hind legs  
    • Heart Rate (HR) – Can be listened to with a stethoscope  
    • 75 bpm (60-90 bpm)  
  • Swine  
    • Pulse – can’t be felt on a pig’s body  
    • HR – Feel by hand directly over the chest or listen with stethoscope  
    • 70 bpm (60-80 bpm)  
| • Count the expansion and relaxation of the ribs or feel the exhale from their nose against your hand  
  • Cattle  
    • About 30 breaths per minute  
  • Sheep  
    • Adult Sheep: 12 – 15 breaths per min  
    • Lambs: 20 – 25 breaths per min  
  • Swine  
    • 8 – 60 breaths per min  
  • Respiration rate slows down with age in pigs |
Other signs to look for...

- **Hydration**
  - "Tent" Test – pinch the skin on the side of the neck and release it. If it lays down in place quickly (3 seconds or less), animal is adequately hydrated. If it stays wrinkled for longer than 3 seconds, the animal may be dehydrated.
  - Capillary Refill – press your finger against a relatively smooth surface on the animal’s gums until it turns white. If it takes longer than 3 seconds to return to pink, the animal is likely dehydrated.

- **Other signs to look for:**
  - Healthy looking pink gums, inner nostrils, eyelids, and lips
  - Bright, clear eyes
How might an animal act if they are sick?
Signs that an animal may be sick

DART Method

- Depression/lethargy
  - Laying down a lot
  - Moving more slowly than usual

- Appetite
  - Not eating/drinking

- Respiration
  - High OR low respiration rate or heart rate

- Temperature
  - High OR low body temperature

- Other
  - Runny nose/eyes, cloudy eyes
  - Not defecating or defecating more than usual
    - Loose fecal material, really hard fecal material

- What else can you think of?

How do we know if a cow is sick? - Bing video

Vet Scripts: How to tell if you cattle are sick (6/10/17) - Bing video
All animal owners will likely experience animal loss at some point. If you lose or have lost an animal, use it as a learning experience so that you can prevent it from happening in the future.
Preventing Illness and Death

- Purchase healthy animals from reputable breeders/sellers
- Quarantine newly acquired animals away from existing herd/flock for at least 30 days to see if they show signs of illness
- Isolate sick animals and medicate them appropriately
  - Correct medication
  - Correct dosage
  - Correct duration
- Work with your veterinarian to develop a herd/animal health program
  - Health testing
  - Vaccinations
  - Anti-parasitic compounds
Preventing Illness and Death

- Provide a constant supply of fresh, clean water
- Ensure their environment (pen, pasture, etc.) is kept safe
  - Proper fencing
  - Predator control
  - No harmful chemicals
  - Keep electric items out of animal reach
  - Toxic plant control
- Reduce stress by following proper handling procedures and maintaining good sanitation
- Provide appropriate nutrition for animals
Most importantly...

• Keep your eyes on them!
  • Observe animals regularly
  • Rule of thumb: look at both sides and all 4 legs

• Keep good records!
  • This is how you know what is “normal” and when an animal deviates from that
LIVESTOCK PARASITES

Internal and External

3rd stage larvae infect grazing cattle.

Adult worms lay eggs which are passed in dung onto pasture.

Larvae escape from dung pat onto pasture.

2nd stage larvae develop into 3rd stage larvae.

1st stage larvae develop into 2nd stage larvae.

Eggs hatch.
Internal Parasites

- Organisms that live in and feed on internal body tissue or fluid for at least a portion of their life
- One of the largest health concerns in cattle, sheep and swine
- Symptoms of internal parasite infestation
  - Weight loss
  - Diarrhea
  - Anemia
  - Depression/listlessness
  - Fast breathing
  - Bottle Jaw
- Animals become infected by consuming the parasites at certain life stages
  - May be attached to grass or other items in animal’s environment
- Diagnose by analyzing fecal samples under microscope
- Treat with anthelmintics (dewormers)
Internal Parasites

Cattle

• Primary concern
  • Roundworms (i.e. brown stomach worm
• Others...
  • Lung worms
  • Tape worms
  • Protozoal diseases (coccidiosis)
  • Liver flukes
Internal Parasites – Sheep

- Primary concerns
  - Barber pole worms
  - Roundworms
  - Lungworms
  - Whip worms
  - Nodular worms
  - Others...
    - Protozoal disease (coccidiosis)
    - Liver flukes
Internal Parasites
Swine

- Primary Concern
  - Large roundworms (Ascarids)
- Others...
  - Nodular worms
  - Whip worms
  - Thread worms
  - Kidney worms
  - Stomach worms
  - Lung worms
  - Coccidiosis
- Keeping swine housed on concrete and hog slat flooring helps prevent worms compared to keeping them in dirt pens
External Parasites

- Live outside the body and feed on skin, hair, and blood
- Can make animals uncomfortable
  - Lots of movement = decreased weight gain
- Can cause sores, lesions, and/or hair loss in severe cases
- Usually can be treated with insecticides
- Prevent by keeping pens cleaned and animals bathed
## External Parasites

<table>
<thead>
<tr>
<th>Cattle</th>
<th>Sheep</th>
<th>Swine</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Black flies</td>
<td>- Lice</td>
<td>- Hog louse</td>
</tr>
<tr>
<td>- Horn flies</td>
<td>- Nose bot flies</td>
<td>- Mites</td>
</tr>
<tr>
<td>- Horse flies</td>
<td>- Keds</td>
<td>- Can cause pigs to get</td>
</tr>
<tr>
<td>- Deer flies</td>
<td>- Mites</td>
<td>mange</td>
</tr>
<tr>
<td>- Sand flies</td>
<td>- Fleas</td>
<td></td>
</tr>
<tr>
<td>- Stable flies</td>
<td>- Fly maggot larvae</td>
<td></td>
</tr>
<tr>
<td>- Cattle grubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Lice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mosquitoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Ticks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ADMINISTERING MEDICATIONS & VACCINATIONS
## Two Elements of Drug Administration

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Dosage and Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Topical</td>
<td>• How much you give</td>
</tr>
<tr>
<td>• Oral</td>
<td>• How often you give it</td>
</tr>
<tr>
<td>• Intramuscular</td>
<td>• How long you give it</td>
</tr>
<tr>
<td>• Subcutaneous</td>
<td></td>
</tr>
<tr>
<td>• Intravenous</td>
<td></td>
</tr>
<tr>
<td>• Intramammary</td>
<td></td>
</tr>
<tr>
<td>• Intrauterine</td>
<td></td>
</tr>
</tbody>
</table>
Topical Administration

Applied to the outside of the body
- Skin
- Eyes
- Hooves
Oral Administration

Ingested through the mouth
- Syringe
- In food/water
Intramuscular Injection

- Given in a muscle

- Injection Sites
  - Cattle
    - Neck region
    - No more than 10 cc should be administered in an area at one time
  - Sheep
    - Neck region
    - No more than 4 cc should be administered in an area at one time
  - Swine
    - Neck, behind and below ear but in front of the shoulder
Subcutaneous Injection

- Given in the subcutaneous tissue between the epidermis (skin) and muscle

Injection sites

- Cattle
  - Neck region preferred
  - Can be given in the elbow (last resort)

- Sheep
  - Behind the elbow
  - Flank

- Swine
  - Behind the elbow
  - Flank
Injections that should only be given by instruction and under supervision of a veterinarian

- Intravenous Injections
  - Given directly into the vein

- Intramammary Injections
  - Given directly into the mammary gland

- Intrauterine Injections
  - Given directly into the uterus

- Intraperitoneal Injections
  - Given directly into the abdomen/digestive tract
**Vetrimec**

**Pour-On for Cattle**

Contains 5mg ivermectin / mL.

**INDICATIONS:**
For the treatment and control of gastrointestinal roundworms (including inhibited Ostertagia ostertagi), lungworms, grubs, horn flies, sucking and biting lice, and acaricidal mange mites in cattle.

**Dosage:**
The dose rate is 1 mL per 22 lb of body weight. The formulation should be applied along the topline in a narrow strip extending from the withers to the tailhead.

**Administration:**
This container is designed to dispense Vetrimec Pour-On into smaller containers or to be used with appropriate automatic dosing equipment. Because of the solvents used in Vetrimec Pour-On, the draw-off device and applicator gun from Simco Tech, or equivalent, is recommended. Other applicators may exhibit compatibility problems resulting in locking, incorrect dosage or damage. Screw Feedlot pack cap and dip tube onto the 20 L bucket ensuring a light fit. Connect the 3m feed tube at one end to the spigot on the Feedlot pack cap and the other end to the applicator gun. Then follow the applicator gun manufacturer’s directions for priming the gun, adjusting the dose, and use of the applicator gun following use. See package insert for use of automatic dosing equipment. Use the following table to determine the proper dose. When body weight is between doses, use the higher dose.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>220 lb (100 kg)</td>
<td>10 mL</td>
</tr>
<tr>
<td>330 lb (150 kg)</td>
<td>15 mL</td>
</tr>
<tr>
<td>440 lb (200 kg)</td>
<td>20 mL</td>
</tr>
</tbody>
</table>

**Residue Information:** Cattle must not be treated within 48 days of slaughter for human consumption. Because a withdrawal time in milk has not been established, do not use in females dairy cattle of breeding age. A withdrawal period has not been established for this product in prepubertal calves. Do not use in calves to be processed for veal.

**Warning:**
- Do not use on ruminants within the last 21 days before slaughter.
- Do not use on sheep.
- Do not use in breeding cattle or in dairy cattle of breeding age.
- Do not use on pregnant cattle.
- Do not use on lactating dairy cattle.
- Do not use on sheep.
- Do not use in dogs.
- Do not use on other animals.
- Do not use in ruminants within the last 21 days before slaughter.

**Precautions:**
Store away from excessive heat (104°F/40°C) and protect from light.

Use only in well-ventilated areas or outdoors.

Close container tightly when not in use.

Cattle should not be treated with this product if hair is wet since reduced efficacy may be experienced.

Do not use when rain is expected to wet cattle within six hours after treatment.

This product is for application to skin surface only. Do not give orally or parenterally.

Coldness in the formulation may occur when Vetrimec (Ivermectin) Pour-On is stored at temperatures below 32°F. Allowing it to warm at room temperature will restore the normal appearance without affecting efficacy.

Antiparasitic activity of ivermectin will be impaired if the formulation is applied to areas of the skin with mange scabs or lesions, or with dermatoses or adherent

**MEDICATION LABELS & INSERTS**
THE IMPORTANT THINGS...

Agrimedimec

Name of Medication

Active Ingredients

agrimecin

Directions: See insert.

Directions

Do not administer to animal 18 days before harvesting product. Do not mix near pens and don't spill on skin.

Withholding Times/

Cautions and Warnings

Storage

Keep medication away from heat and protect from light.

Contents: 50cc.

Amount of Contents

Distributor Name

Fairs-R-Us
LET'S BREAK DOWN AN INSERT
Why is it important to know how much your animal weighs?
Weight Estimation

- We dose medications based on body weight (BW)
- We feed based on BW
- How can we estimate the weight of our animals?
  - Scale
  - Weight tapes
  - BW estimation formulas
BW Estimation Formulas

- **Measure Length of Animal**
  - **Cattle & Sheep**: the point of the shoulder to the point of the rump
  - **Swine**: between the ears to the tail down the back

- **Measure Heart Girth of Animal**
  - Around the barrel of the animal right behind the shoulder

- **Formulas**
  - **Cattle & Sheep**
    - \( \text{HeartGirth}^2 \times \text{Length} \div 300 = \text{BW (lb)} \)
  - **Swine**
    - \( \text{HeartGirth}^2 \times \text{Length} \div 400 = \text{BW (lb)} \)
BW Estimation

- Steer
- Heart Girth = 60 in
- Length = 80 in
- About how much does he weigh?
Now, we need to deworm this steer with Agrimectin…

- How much Agrimectin does this steer need?
- BW = 960
- Dosage?
- What’s the earliest date he can now go to slaughter?
RESTRAINT

Why do we restrain animals?
Methods of Restraint

Physical Restraint

Using tools and physical force to restrain

What are some examples of physical restraint?

- Ropes
- Snares
- Nose Tongs/Twitches
- Canes
- Prods
Methods of Restraint

Confinement
A barrier of some kind; another form of physical restraint

What are some examples of confinement?

- Pens
- Chutes
- Alleys
- Stalls
Methods of Restraint

Training and Desensitization
Repeating exposure to stimuli until animal reacts minimally

How do you train your animals?

Have you had to desensitize your animal(s) to something this year?
Methods of Restraint

Psychological
Knowledge and anticipation of natural behaviors to accomplish a task

What methods of restraint do you see in the picture?
Psychological Restraint

Cattle handling facilities are built to accommodate psychological restraint.

What do you know about cattle and other animals that might affect how they go through these pens and chutes?

Are cattle predator or prey animals?
Methods of Restraint

Chemical Restraint
Sedation or immobilization; can be dangerous and SHOULD NOT be used without veterinary supervision

Why do you think chemical restraint is dangerous?
When do you think it might be necessary?
Ropes Used in Restraint

Rope is one of the tools used most often by livestock producers. Knowledge of rope, knots, and hitches is important.

- Usually a 3-strand braided rope; comes in many diameters

**Cotton Rope**
- Soft and flexible
- Least likely to cause rope burn
- Not as strong as other fibers; will rot and deteriorate over time
- Good for:
  - Tying limbs
  - Neck ropes
  - Lead ropes (5/8”+ diameter)
Ropes Used in Restraint

Rope is one of the tools used most often by livestock producers. Knowledge of rope, knots, and hitches is important.

- Usually a 3-strand braided rope; comes in many diameters

- **Nylon Rope**
  - Strongest type of rope
  - Will not rot from mildew
  - Will stretch
  - Can cause rope burn
  - Great for total restraint
Ropes Used in Restraint

- Regardless of the fiber, ropes should have a fairly wide diameter, soft-surface, and be free of knots.
- Webbing should be free of rust and dirt and have smooth surfaces.
- Ropes should be kept clean, dry, and untangled.