Indiana 4-H/FFA
State Livestock Skillathon Contest
2019 Changes/Updates

Area Contests
• Will be held during late August/early September. Contact your area judging committee representative for more information.
• Senior: Top 4 Senior Teams move up to State Contest. (If an area contest included both 4-H and FFA teams, but both divisions were not represented by the teams qualifying for the state contest, the area chairperson may add an additional state qualifying team to represent the missing division (4-H or FFA).)
• Junior: Top 2 Junior Teams move up to State Contest.

Below are the topics for the area contest. Each topic will be multiple choice and on a single sheet scantron and will be done individually (300 total possible points; total possible for team = 900).

• Breeds – 10 breeds @ 5 points each for Junior and Breed: 3 pt, Description: 2 pt for Senior
• Equipment – 10 pieces of equipment @ 5 points each
• Feeds – 10 feeds @ 5 points each for Junior and Feed: 3 pt, Classification: 2 pt for Senior
• Meat – 10 retail cuts @ 5 points each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt; Cookery: 1 pt)
• Industry Quiz – 25 questions @ 2 points each
• Quality Assurance – 25 questions @ 2 points each

State Contest
Saturday, September 21, 2019
ASREC Machine Shed
5675 W 600 N, West Lafayette, IN 47906
Registration: 7:30 AM in ASREC Classroom  Contest: 8:30 AM  Cost: $10 per constant

Contest Classes-
Individual Stations (350 total possible points)
1. Equipment ID – 10 items @ 5 points each
2. Breed ID – 10 breeds @ 5 points each for Junior and Breed: 3 pt, Description: 2 pt for Senior
3. Retail Meat ID – 10 items @ 5 points each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt; Cookery: 1 pt)
4. Hay and Wool Judging – 50 points for each class
5. Quality Assurance – 25 questions (50 points)
6. Industry Quiz – 25 questions (50 points)

Team Stations (300 total possible points)-
1. Quality Assurance (60 points)
   a. 20 questions, could include real stuff (medicine bottle, needle for ID, etc. and could include live animals). Live animal would only include animal movement and using live animal as a reference.
2. Carcass Evaluation and Marketing (50 points for placing and 10 points for questions)
   a. Placing class with pictures of carcass or meat cuts and likely a scenario, could include using a grid and pricing, 5 questions
3. Animal Breeding (50 points for keep/cull and 10 points for questions) and Feedstuff ID and Classification (60 points)
   a. Keep/Cull activity and 5 questions
   b. ID 10 feedstuffs with classification
4. Performance and Marketing (50 points for placing and 10 points for questions)
   a. Placing class with performance data (not EPDs but actual data) likely with a scenario, 5 questions
** With the Performance and Marketing Station, the youth are allowed to use a calculator. **NO** programmable calculators or cellphones used as calculator will be allowed!**

Ties will be broken in the following order: Industry Quiz, Quality Assurance, and Retail Meat ID
### Meat Identification

<table>
<thead>
<tr>
<th>ID #</th>
<th>Species</th>
<th>Primal</th>
<th>Retail</th>
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### Breed Identification

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### Equipment Identification

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### Feed Identification

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### Industry Quiz

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### Team Name / Additional Info

John Smith
Y - M County
### Example of Correctly Bubbled Scantron Sheet – Side 2

#### Meat Identification

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#### Breed Identification

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#### Feed Identification

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# Breeds of Livestock Master List

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<th><strong>Beef</strong></th>
<th><strong>Description</strong></th>
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<tbody>
<tr>
<td><strong>Angus</strong></td>
<td>British breed with highest number of registrations in the US. Noted for mothering ability and carcass marbling.</td>
</tr>
<tr>
<td><strong>Brahman</strong></td>
<td>Bos Indicus breed known for heat and insect tolerance.</td>
</tr>
<tr>
<td><strong>Brangus</strong></td>
<td>Developed in the US, made up of 3/8 Brahman and 5/8 Angus. Bred for heat tolerance of Brahman and maternal and carcass traits of Angus.</td>
</tr>
<tr>
<td><strong>Charolais</strong></td>
<td>High growth breed originally from France known for muscle and cutability.</td>
</tr>
<tr>
<td><strong>Chianina</strong></td>
<td>Developed in Italy. Known for size and growth, referred to as the tallest breed of cattle.</td>
</tr>
<tr>
<td><strong>Gelbvieh</strong></td>
<td>Developed in Germany, originally considered a dual purpose breed. Has good carcass cutability and relatively early puberty.</td>
</tr>
<tr>
<td><strong>Hereford</strong></td>
<td>Can be horned or polled. Hardy British breed which in recent years combined polled and horned associations.</td>
</tr>
<tr>
<td><strong>Limousin</strong></td>
<td>Developed in France with moderate growth rate and frame size and high carcass cutability.</td>
</tr>
<tr>
<td><strong>Maine-Anjou</strong></td>
<td>Developed in France by crossing the Durham and the Mancelle breeds. Has good muscling.</td>
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<tr>
<td><strong>Red Angus</strong></td>
<td>From Scotland. Considered maternal with good terminal-related performance.</td>
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<tr>
<td><strong>Red Poll</strong></td>
<td>Originally developed as a dual-purpose breed in England that would possess moderate size, would fatten quickly and also produce a good milk supply.</td>
</tr>
<tr>
<td><strong>Salers</strong></td>
<td>Found in ancient cave drawings dated 7,000 years ago in France. Considered to be one of the oldest and most genetically pure of all of the European breeds.</td>
</tr>
<tr>
<td><strong>Santa Gertrudis</strong></td>
<td>Developed in Texas by crossing the Brahman (3/8) and Shorthorn (5/8) breeds. Became first official breed developed in the US. Known for heat tolerance and maternal.</td>
</tr>
<tr>
<td><strong>Shorthorn</strong></td>
<td>Originated in England, with three distinct color patterns, considered a maternal breed.</td>
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<tr>
<td><strong>Simmental</strong></td>
<td>Originally developed in Switzerland for meat, milk and draft. Now noted for high growth rate, milking ability, and carcass cutability.</td>
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<tr>
<td><strong>Texas Longhorn</strong></td>
<td>Due to its natural selection and adaption, this breed is considered to be a survival of the fittest breed. Known for being hardy, aggressive and adaptable.</td>
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<table>
<thead>
<tr>
<th><strong>Sheep</strong></th>
<th><strong>Description</strong></th>
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<tbody>
<tr>
<td><strong>Cheviot</strong></td>
<td>Small sized meat breed noted for its hardiness from Scotland.</td>
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<tr>
<td><strong>Columbia</strong></td>
<td>Large frame US breed, developed from Lincolns and Rambouillets.</td>
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<tr>
<td><strong>Corriedale</strong></td>
<td>Large frame wool breed developed from crossing Lincoln or Leicester rams on Merino ewes.</td>
</tr>
<tr>
<td><strong>Dorper</strong></td>
<td>Primarily a mutton sheep, this breed was developed in South Africa and is one of the most fertile of sheep breeds.</td>
</tr>
<tr>
<td><strong>Dorset</strong></td>
<td>English, white face, meat breed known for out of season breeding.</td>
</tr>
<tr>
<td><strong>Finnsheep</strong></td>
<td>Lighter muscled breed from Finland noted for being prolific.</td>
</tr>
<tr>
<td><strong>Hampshire</strong></td>
<td>Large framed, English, meat breed with black face and wool cap.</td>
</tr>
<tr>
<td><strong>Katahdin</strong></td>
<td>A hair sheep breed developed in the United States.</td>
</tr>
<tr>
<td><strong>Lincoln</strong></td>
<td>Although not a popular breed in the US, this breed is unique because the fleece of is carried in heavy locks that are often twisted into a spiral near the end.</td>
</tr>
<tr>
<td><strong>Montadale</strong></td>
<td>Breed developed from Columbia and Cheviot cross noted for high quality carcasses and excellent wool.</td>
</tr>
<tr>
<td><strong>Merino</strong></td>
<td>Very fine fleece breed with heavy wool production from Spain.</td>
</tr>
<tr>
<td>Breed</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Oxford</td>
<td>This breed originated as the result of crossing Cotswolds and Hampshires and produces the heaviest fleece of any of the Down breeds.</td>
</tr>
<tr>
<td>Rambouillet</td>
<td>Wool breed developed in France and Germany from Merino breed.</td>
</tr>
<tr>
<td>Shropshire</td>
<td>Breed originating in England known as one of the heaviest wool producers among the medium wool breeds.</td>
</tr>
<tr>
<td>Southdown</td>
<td>This breed is early maturing with good lambing ability and average milk production. They excel in a cross breeding program in their ability to produce meaty lamb carcasses at light weights and hot-house lambs.</td>
</tr>
<tr>
<td>Suffolk</td>
<td>Large framed, black faced breed known for high growth rate and carcass cutability from England.</td>
</tr>
<tr>
<td>Tunis</td>
<td>This is a medium sized meat type breed that is also known for their disease resistance and their ability to remain productive on marginal land.</td>
</tr>
</tbody>
</table>

**Swine**

<table>
<thead>
<tr>
<th>Breed</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berkshire</td>
<td>Originally from England noted for pork quality, tenderness and marbling.</td>
</tr>
<tr>
<td>Chester White</td>
<td>Known as a maternal breed with high conception rates, developed in PA.</td>
</tr>
<tr>
<td>Duroc</td>
<td>Noted for high growth rate, durability and leanness, developed in New Jersey and New York.</td>
</tr>
<tr>
<td>Hampshire</td>
<td>Terminal sire breed with unique color patterns that is noted for muscle and cutability.</td>
</tr>
<tr>
<td>Hereford</td>
<td>Dual purpose breed, red with white markings on head and lower body.</td>
</tr>
<tr>
<td>Landrace</td>
<td>Noted for large litters and large droopy ears, generally refined in bone.</td>
</tr>
<tr>
<td>Pietrain</td>
<td>Noted for extreme muscle volume and shape, with a high propensity for stress which is related to pork quality concerns.</td>
</tr>
<tr>
<td>Poland China</td>
<td>Lean, heavy muscled, black breed with six white points and droopy ears from Ohio.</td>
</tr>
<tr>
<td>Spot</td>
<td>Black and white, developed in US, noted for rapid growth and as aggressive breeders</td>
</tr>
<tr>
<td>Tamworth</td>
<td>Red, rugged, active breed known as a lean type hog with long neck, snout and leg.</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>Has erect ears, known as the “mother breed”.</td>
</tr>
</tbody>
</table>

**Goat**

<table>
<thead>
<tr>
<th>Breed</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angora</td>
<td>The most valuable characteristic of this breed as compared to other goats is the value of the mohair that is clipped.</td>
</tr>
<tr>
<td>Boer</td>
<td>A prominent strong head with brown eyes and a gentle appearance. Nose with a gentle curve, wide nostrils, and well-formed mouth with well-opposed jaws. Body should be boldly three dimensional: long, deep, wide</td>
</tr>
<tr>
<td>Kiko</td>
<td>Known for hardiness and ability to achieve substantial weight gains when under natural conditions without supplementary feeding. Large framed, generally white with a coat that ranges from slick in summer to flowing hair when run in mountain country in winter.</td>
</tr>
<tr>
<td>Pygmy</td>
<td>Originally exported from Africa to zoos in Sweden and Germany where they were on display as exotic animals.</td>
</tr>
<tr>
<td>Tennessee Woodenleg</td>
<td>Myotonic, their muscles become extremely stiff when they are frightened. This hereditary condition makes the goat very muscular.</td>
</tr>
<tr>
<td>Tool</td>
<td>Tool</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Ammonia Sensor</td>
<td>Nasal Cannula</td>
</tr>
<tr>
<td>Antiseptic Applicator</td>
<td>Needle Teeth Clippers</td>
</tr>
<tr>
<td>Balling Gun</td>
<td>Nipple Waterer</td>
</tr>
<tr>
<td>Beef Cattle Frame Stick</td>
<td>Nose Lead</td>
</tr>
<tr>
<td>Beef Halter</td>
<td>Pig Obstetrical Forceps</td>
</tr>
<tr>
<td>Breeding Catheter</td>
<td>Pig Resuscitator</td>
</tr>
<tr>
<td>Cattle Clippers</td>
<td>Pistol Grip Syringe</td>
</tr>
<tr>
<td>Cattle AI Gun</td>
<td>Prolapse Ring Retainer</td>
</tr>
<tr>
<td>Cauterizing Tail Docker</td>
<td>Ralgro Implant Gun</td>
</tr>
<tr>
<td>Curry Comb</td>
<td>Pig Resuscitator</td>
</tr>
<tr>
<td>Dehorner</td>
<td>Pistol Grip Syringe</td>
</tr>
<tr>
<td>Disposable Syringe</td>
<td>Prolapse Ring Retainer</td>
</tr>
<tr>
<td>Drench Gun</td>
<td>Ralgro Implant Gun</td>
</tr>
<tr>
<td>Ear Notchers</td>
<td>Ram Marking Harness</td>
</tr>
<tr>
<td>Ear Tag Pliers</td>
<td>Rumen Magnet</td>
</tr>
<tr>
<td>Elastrator</td>
<td>Scalpel</td>
</tr>
<tr>
<td>Electric Fence Tester</td>
<td>Scotch Comb</td>
</tr>
<tr>
<td>Electronic ID Tag</td>
<td>Shearer's Screwdriver</td>
</tr>
<tr>
<td>Emasculator</td>
<td>Sheep Shears</td>
</tr>
<tr>
<td>Ewe Spoon</td>
<td>Swine Breeding Spirette</td>
</tr>
<tr>
<td>Foot Rot Shears</td>
<td>Tattoo Pliers</td>
</tr>
<tr>
<td>Forage Probe</td>
<td>Test Tube</td>
</tr>
<tr>
<td>Freeze Branding Iron</td>
<td>Transfer Needle</td>
</tr>
<tr>
<td>Heat Detection Patch</td>
<td>Vacutainer</td>
</tr>
<tr>
<td>Hog Snare</td>
<td>Wool Card</td>
</tr>
<tr>
<td>Hoof Chisel</td>
<td></td>
</tr>
<tr>
<td>Hoof Trimmer</td>
<td></td>
</tr>
<tr>
<td>Intravenous Set</td>
<td></td>
</tr>
<tr>
<td>Knife Steel</td>
<td></td>
</tr>
<tr>
<td>Lamb Boot</td>
<td></td>
</tr>
<tr>
<td>Lamb Tube Feeder</td>
<td></td>
</tr>
</tbody>
</table>
Feedstuffs Master List

**Feedstuffs**
Whole Shelled Corn
Cracked Corn
Steam Flaked Corn
Corn Gluten Feed Pellets
Corn Gluten Meal
Distiller’s Grain
Whole Soybeans
Soybean Hulls
Soybean Meal
Whole Grain Wheat
Wheat Middlings
Whole Grain Barley
Cottonseed Hulls
Cottonseed Meal
Whole Oats
Rolled Oats
Dried Sugar Beet Pulp
Fish Meal
Feather Meal
Blood Meal
Dehydrated Alfalfa Meal Pellets
Dicalcium Phosphate
Dried Whey
Ground Limestone
Trace Mineral Salt
White Salt
Urea
Dry Molasses
Liquid Molasses

**Classifications**
Energy
Protein
Mineral
<table>
<thead>
<tr>
<th>Species</th>
<th>Primal</th>
<th>Retail</th>
<th>Cookery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>Chuck</td>
<td>Top Blade Steak (Flat Iron)</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Flank</td>
<td>Flank Steak</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Loin</td>
<td>Porterhouse Steak</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Loin</td>
<td>T-bone Steak</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Loin</td>
<td>Top Loin Steak</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Loin</td>
<td>Tenderloin Steak</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Plate</td>
<td>Short Ribs</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Rib</td>
<td>Rib Roast</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Rib</td>
<td>Ribeye Steak, Bnls</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Round</td>
<td>Round Steak, Bnls</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Round</td>
<td>Bottom Round Roast</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Round</td>
<td>Eye Round Steak</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Round</td>
<td>Tip Roast - Cap Off</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Round</td>
<td>Top Round Steak</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Various</td>
<td>Cube Steak</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Various</td>
<td>Beef for Stew</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Various</td>
<td>Ground Beef</td>
<td>Dry</td>
</tr>
<tr>
<td>Beef</td>
<td>Variety</td>
<td>Heart</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Variety</td>
<td>Kidney</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Variety</td>
<td>Liver</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Variety</td>
<td>Oxtail</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Variety</td>
<td>Tongue</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Ham/Leg</td>
<td>Pork Fresh Ham Center Slice</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Ham/Leg</td>
<td>Pork Fresh Ham Shank Portion</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Ham/Leg</td>
<td>Smoked Ham, Center Slice</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Blade Chops</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Blade Roast</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Center Rib Roast</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Country Style Ribs</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Smoked Loin Chop</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Loin Chops</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Smoked Rib Chop</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Rib Chops</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Loin</td>
<td>Butterflied Chop Bnls</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Shoulder</td>
<td>Arm Roast</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Shoulder</td>
<td>Blade Boston Roast</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Shoulder</td>
<td>Blade Steak</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Side/Belly</td>
<td>Fresh Side</td>
<td>Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Side/Belly</td>
<td>Slab Bacon</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Side/Belly</td>
<td>Sliced Bacon</td>
<td>Dry</td>
</tr>
<tr>
<td>Pork</td>
<td>Spareribs</td>
<td>Pork Spareribs</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Variety</td>
<td>Heart</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Variety</td>
<td>Kidney</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Meat</td>
<td>Variety</td>
<td>Cut</td>
<td>Moisture</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Pork</td>
<td>Variety</td>
<td>Liver</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Pork</td>
<td>Variety</td>
<td>Tongue</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Loin</td>
<td>Loin Chops</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Rib</td>
<td>Rib Chops</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Rib</td>
<td>Rib Chops Frenched</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Rib</td>
<td>Rib Roast</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Shoulder</td>
<td>Arm Chops</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Shoulder</td>
<td>Blade Chops</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Leg</td>
<td>Center Slice</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Variety</td>
<td>Heart</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Variety</td>
<td>Kidney</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Variety</td>
<td>Liver</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Variety</td>
<td>Tongue</td>
<td>Dry/Moist</td>
</tr>
</tbody>
</table>
**Important Note:** The following material is provided for examples of the knowledge that will be tested and question types that can be expected in the Skillathon CDE. It is by no means an exhaustive list of material. An attempt will be made to keep two years’ worth of material in packet.

## RETAIL CUT IDENTIFICATION

Score sheets like those that will be used are included below. They will bubble their answers in the corresponding sections on the scantron sheet. Seniors and Juniors will answer Species, Primal, Retail and Cookery. There will be separate divisions for Seniors and Juniors. This is an individual portion of the contest and youth are expected to do their own work. Resources for identifying various cuts of meat are at: [http://aggiemeat.tamu.edu/judging](http://aggiemeat.tamu.edu/judging). See retail meat master list earlier in this document.

<table>
<thead>
<tr>
<th>2012 Livestock Skillathon - Retail Meat ID</th>
<th>Senior - A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Species</td>
<td></td>
</tr>
<tr>
<td>A. Beef</td>
<td>B. Pork</td>
</tr>
<tr>
<td>C. Lamb</td>
<td></td>
</tr>
<tr>
<td>2) Wholesale</td>
<td></td>
</tr>
<tr>
<td>A. Round</td>
<td>B. Flank</td>
</tr>
<tr>
<td>C. Plate</td>
<td>D. Loin</td>
</tr>
<tr>
<td>E. Various</td>
<td></td>
</tr>
<tr>
<td>3) Retail</td>
<td></td>
</tr>
<tr>
<td>A. Blade Boston</td>
<td>B. Eye Round Roast</td>
</tr>
<tr>
<td>C. Round Tip Roast</td>
<td>D. Arm Chop</td>
</tr>
<tr>
<td>E. Back Ribs</td>
<td></td>
</tr>
<tr>
<td>4) Cookery</td>
<td></td>
</tr>
<tr>
<td>A. Dry Heat</td>
<td>B. Moist Heat</td>
</tr>
<tr>
<td>C. Dry or Moist Heat</td>
<td></td>
</tr>
</tbody>
</table>

## LIVESTOCK FEED IDENTIFICATION

Score sheets like those that will be used are included below. They will bubble their answers in the corresponding sections on the scantron sheet. Students identify 10 feedstuffs and their classification. One internet resource that will prove helpful in studying for this portion of the contest is the University of Kentucky’s agripedia site located at [http://www.ca.uky.edu/agripedia/agmania/feedid/](http://www.ca.uky.edu/agripedia/agmania/feedid/). Additionally, it might be helpful to collect an actual feedstuff bank so students can determine textures and smells associated with each feedstuff that cannot be determined online. See feedstuff master list earlier in this document.

<table>
<thead>
<tr>
<th>2012 Livestock Skillathon - Feed ID</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Feed Sample</td>
<td></td>
</tr>
<tr>
<td>A. White Salt</td>
<td>B. Wheat Middlings</td>
</tr>
<tr>
<td>C. Cracked Corn</td>
<td>D. Dicalcium Phosphate</td>
</tr>
<tr>
<td>E. Trace Mineral Salt</td>
<td></td>
</tr>
<tr>
<td>2) Nutrition</td>
<td></td>
</tr>
<tr>
<td>A. Energy</td>
<td>B. Protein</td>
</tr>
<tr>
<td>C. Minerals</td>
<td></td>
</tr>
<tr>
<td>3) Feed Sample</td>
<td></td>
</tr>
<tr>
<td>A. Corn Gluten Meal</td>
<td>B. Dried Whey</td>
</tr>
<tr>
<td>C. Dry Molasses</td>
<td>D. Limestone</td>
</tr>
<tr>
<td>E. Cracked Corn</td>
<td></td>
</tr>
<tr>
<td>4) Nutrition</td>
<td></td>
</tr>
<tr>
<td>A. Energy</td>
<td>B. Protein</td>
</tr>
<tr>
<td>C. Minerals</td>
<td></td>
</tr>
</tbody>
</table>

12
LIVESTOCK BREED IDENTIFICATION

Score sheets like those that will be used are included below. They will bubble their answers in the corresponding sections on the scantron sheet. Students will identify breeds using pictures of livestock from four species (beef, sheep, swine, and goat). Seniors will also be asked to match the breed description with the appropriate picture and breed. See livestock breed master list earlier in this document.

Senior

<table>
<thead>
<tr>
<th>2012 Livestock Skillathon - Senior Breed ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill in bubble for each question. There are 2 questions for each item. Each breed is worth 3 points and description is worth 2 points</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Breed</th>
<th>A. Yorkshire</th>
<th>B. Berkshire</th>
<th>C. Landrace</th>
<th>D. Chester White</th>
<th>E. Hampshire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1)</td>
<td>A. Originally from England noted for pork quality, tenderness and marbling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Lean, heavy muscled, black breed with six white points and droopy ears from Ohio.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Has erect ears, known as the &quot;mother breed&quot;.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>D. Known as a maternal breed with high conception rates, developed in PA.</td>
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<tr>
<td></td>
<td></td>
<td>E. Noted for large litters and large droopy ears, generally refined in bone.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>2) Description</td>
<td>A. The most valuable characteristic of this breed as compared to other goats is the value of the mohair that is clipped.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Prom. strong head, brown eyes, gentle app., gentle curve nose, wide nostrils, well-formed mouth with well-opp. jaws. Body is boldly 3 dim: long, deep, wide.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>C. Originally exported from Africa to zoos in Sweden and Germany where they were on display as exotic animals.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>D. Myotonic, their muscles become extremely stiff when they are frightened. This hereditary condition makes the goat very muscular.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>E. A hair breed of sheep developed in the United States.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>2012 Livestock Skillathon - Junior Breeds Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill in bubble for each question. Each piece of equipment is worth 5 points</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Breed</th>
<th>A. Yorkshire</th>
<th>B. Berkshire</th>
<th>C. Landrace</th>
<th>D. Chester White</th>
<th>E. Hampshire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1)</td>
<td>A. Yorkshire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2)</td>
<td>A. Dorset</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3)</td>
<td>A. Yorkshire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MEAT JUDGING

Meat Judging Class: Rank two classes of four similar retail cuts of meat (100 possible points). Seniors must also answer five questions for each class (25 points). Resources for meat judging are at: http://aggiemeat.tamu.edu/judging.

FLEECE/HAY JUDGING

Fleece and Hay Judging Class: (100 possible points) Rank a class of four hay samples with forage analysis information. Rank a class of four samples of fleece. For more information on evaluation of hay and fleece samples please refer to the Resource Section later in this document.

2017 Livestock Skillathon – Fleece Judging

Rank the four fleeces as they would be marketed by a northern Indiana commercial sheep producer who has recently found a niche market that pays a premium for locally produced raw wool.
2016 Livestock Skillathon – Fleece Judging
Rank the four fleeces as they would be used in a premium line of heavy wool outerwear including jackets and sweaters.

2017 Livestock Skillathon – Hay Judging
Rank these hays to be used in an Indiana herd with 30 lactating sheep. This operation makes it a goal to select hays that don’t require an additional protein supplement. Financial resources are abundant.

<table>
<thead>
<tr>
<th>No.</th>
<th>% DM</th>
<th>% CP</th>
<th>% TDN</th>
<th>Cost ($/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>85.9</td>
<td>9.5</td>
<td>61.2</td>
<td>151</td>
</tr>
<tr>
<td>2</td>
<td>88.3</td>
<td>12.0</td>
<td>66.0</td>
<td>203</td>
</tr>
<tr>
<td>3</td>
<td>88.8</td>
<td>16.3</td>
<td>68.9</td>
<td>211</td>
</tr>
<tr>
<td>4</td>
<td>86.4</td>
<td>9.3</td>
<td>60.8</td>
<td>149</td>
</tr>
</tbody>
</table>

2016 Livestock Skillathon – Hay Judging
Rank these hays as they would be used in a least-cost, maintenance ration for early gestating mature cows where protein is supplemented as needed.

<table>
<thead>
<tr>
<th>No.</th>
<th>% DM</th>
<th>% CP</th>
<th>% TDN</th>
<th>Cost ($/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>87.9</td>
<td>9.9</td>
<td>61.2</td>
<td>151</td>
</tr>
<tr>
<td>2</td>
<td>88.7</td>
<td>16.1</td>
<td>68.7</td>
<td>211</td>
</tr>
<tr>
<td>3</td>
<td>88.3</td>
<td>15.7</td>
<td>68.1</td>
<td>206</td>
</tr>
<tr>
<td>4</td>
<td>87.6</td>
<td>9.7</td>
<td>60.8</td>
<td>149</td>
</tr>
</tbody>
</table>

LIVESTOCK EQUIPMENT IDENTIFICATION
Score sheets like those that will be used are included below. They will bubble their answers in the corresponding sections on the scantron sheet. Students identify 10 pieces of equipment. Seniors must also identify the use with each piece of equipment. See livestock equipment master list earlier in this document.

Senior

Junior
QUALITY ASSURANCE

2018 Livestock Skillathon – Quality Assurance – Junior Division

PILIGUARD® PINKEYE-1 TRIVALENT – Intervet/Merck Animal Health

Moraxella Bovis Bacterin

Contains chemically-inactivated cultures of *Moraxella bovis* isolates referred to by Intervet Inc. as Strains Epp 63, Fla 64 and SAH 38 in an oil emulsion adjuvant. For use in healthy cattle to aid in the control of pinkeye associated with infection by *Moraxella bovis* strains expressing pili similar to those expressed by isolates referred to by Intervet Inc. as Strains Epp 63, Fla 64 and SAH 38.

**ADMINISTRATION:** Shake well before use. The vaccine may be warmed to room temperature prior to injection. Inject 2 mL subcutaneously or intramuscularly INTO THE NECK 3 to 6 weeks prior to onset of pinkeye season. Annual revaccination is recommended.

**CAUTION:** For veterinary use only. Use may occasionally lead to development of granulomas which may persist for several weeks. Store at 2°-7°C (35°-45°F). Do not freeze. Use entire contents when first opened. Do not vaccinate within 60 days of slaughter. Transient local reaction may occur at the injection site. If anaphylaxis occurs administer epinephrine. Hypersensitivity reactions may occur with a biological product and can cause temporary reduced milk production in lactating cattle.

**PRESERVATIVE:** Gentamicin.

**WARNING:** Extreme caution should be used when injecting any oil emulsion vaccine to avoid injecting your own finger or hand. Accidental injection can cause serious local reaction. *Contact a physician immediately if accidental injection occurs.*

U.S. Veterinary License No. 165A; Intervet Inc., Omaha, Nebraska 68103, USA; 1 800 211-3573 (USA)

**NAC No.:** 1047153.4; v© 1990, 2009; Intervet Inc.; All rights reserved.

<table>
<thead>
<tr>
<th>NDC-Code</th>
<th>NDC-Number</th>
<th>Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0061-0969-01</td>
<td>20 mL</td>
<td>10</td>
</tr>
<tr>
<td>0061-0969-02</td>
<td>100 mL</td>
<td>50</td>
</tr>
</tbody>
</table>

1. This product is considered an
   a. Antibiotic   c. Anthelmintic
   b. Analgesic   d. None of the above

2. This product should be administered
   a. 3-6 days post calving   c. 3-6 weeks prior to pinkeye season
   b. 3-6 months of age   d. None of the above are appropriate

3. This particular product should only be administered to
   a. Swine   c. Beef
   b. Sheep   d. Goats

4. This product is designed to ____________ disease.
   a. Treat   b. Prevent

5. This product is administered to the animal by
6. They is a chance for injection site reactions associated with this product.
   a. True  
   b. False

7. There is a risk of injury/illness if this product is accidently injected into a human.
   a. True  
   b. False

8. The acceptable route of administration is
   a. SubQ  
   b. IV  
   c. IM  
   d. All are appropriate  
   e. Only A and C are appropriate

9. The dosage for a 550-pound weaned steer is
   a. 1 mL  
   b. 2 mL  
   c. 3 mL  
   d. dosage depends on weight of the calf

10. When are boosters indicated for this product
    a. 3 weeks post initial injection  
    b. Annually  
    c. Semi-annually for breeding animals  
    d. Never

11. The proper injection site for this product is
    a. Neck  
    b. Loin  
    c. Ham  
    d. All are appropriate

12. What disease does this product provide protection against?
    a. Pinkeye  
    b. Bovine respiratory disease  
    c. Blackleg  
    d. Influenza

13. What is the smallest bottle of this product that is available?
    a. 10 doses  
    b. 20 doses  
    c. 50 doses  
    d. 100 doses

14. Administering 4 cc of this product to a gestating cow
    a. Will provide double protection  
    b. Means that no booster is needed  
    c. Is an extra label use  
    d. Will likely kill the cow

15. It is appropriate to use half of the doses in a bottle, and then store the remainder in bottle for 2 weeks.
    a. True  
    b. False

16. Prior to opening the bottle, this product requires shaking to thoroughly mix the product before use.
    a. True  
    b. False

17. If anaphylactic shock occurs after injection of this product, treat with
    a. Testosterone  
    b. Epinephrine  
    c. Estrogen  
    d. None of the above

18. Marketing a steer 1 month post injection with this product is likely to result in
    a. Higher price per pound  
    b. Drug residue in the meat  
    c. Higher weaning weight  
    d. None of the above
19. This product should be stored in a refrigerator.
   a. True    b. False

20. Gentamicin is added to this product as a preservative.
   a. True    b. False

21. Which is the most appropriate size needle to use for an injection of this product to a 1200-pound cow?
   a. 14 gauge    c. 20 gauge
   b. 18 gauge    d. 22 gauge

22. When is it acceptable to increase the dosage of this product?
   a. Never    c. Sales rep can approve
   b. Veterinarian can approve    d. The first use of product only

23. The withdrawal period for this product is
   a. 0 days    c. 40 days
   b. 20 days    d. 60 days

24. Once allowed to freeze, this product should be discarded.
   a. True    b. False

25. Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.
   a. True    b. False

2017 Livestock Skillathon – Quality Assurance Quiz – Junior Division – Individual

Dectomax – Injectable Solution – Pfizer Animal Health

DECTOMAX® Injectable Solution is a ready-to-use, colorless to pale yellow, sterile solution containing 1% w/v doramectin (10 mg/mL). In cattle, DECTOMAX is formulated to deliver the recommended dosage (200 mcg/kg of body weight) when given by subcutaneous (SC) or intramuscular (IM) injection at the rate of 1 mL/110 lb of body weight.

DECTOMAX® Injectable Solution is indicated for the treatment and control of gastrointestinal roundworms, lungworms, eyeworms, grubs (see precautions), sucking lice and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Approved Uses: DECTOMAX Injectable Solution is approved for:

- The treatment and control of internal and external parasites of cattle.
- It is safe for use in beef cattle, including pregnant cows, newborn calves and bulls.
- The control of the following harmful species of gastrointestinal roundworms, lungworms, eyeworms, grubs (see precautions), sucking lice and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.
- DECTOMAX Injectable solution has been proven to effectively control infections and protect cattle from reinfection with Coopera oncophora and Haemonchus placei for 14 days, Ostertagia ostertagi for 21 days and for Cooperia punctata, Oesophagostomum radiatum and Dictyocaulus viviparus for 28 days after treatment.

Product Highlights:

- DECTOMAX Injectable solution was the first cattle endectocide or anthelmintic labeled for extended activity—up to 21 days—against Ostertagia ostertagi, one of the most damaging internal parasites. Controlling infection over an extended period delays accumulation of adult worms, subsequently reducing the number of parasite eggs shed onto pasture.
- DECTOMAX also protects against infection or reinfection with Dictyocaulus viviparus, Oesophagostomum radiatum and Cooperia punctata for up to 28 days.
- No other single injectable product controls a broader spectrum of internal and external parasites as DECTOMAX—including 36 stages of adult parasites, L4 larvae and inhibited larvae.
- As an injectable solution, DECTOMAX offers precision dosing.
- DECTOMAX is a tissue-friendly injectable solution that can be administered by subcutaneous (SC) or intramuscular (IM) injection in the neck region. The recommended route is via SQ injection to minimize the risk of injection-site blemishes and is in accord with Beef Quality Assurance guidelines.

DECTOMAX is safe for use in beef cattle, including pregnant cows, newborn calves and bulls.

**Dosage and Administration**

**Packaging:** 100-mL, 200-mL and 500-mL multi-dose, rubber-capped amber glass bottles contained in a clear polycarbonate shield. The polycarbonate shield holds the bottle during use, has a pre-drilled eye-hook for easy hanging, and can be recycled.

**Dosage and Administration:** Administer DECTOMAX injectable solution at the recommended dosage of 1 mL (10 mg doramectin) per 110 lb body weight by either subcutaneous or intramuscular injection. Beef Quality Assurance guidelines recommend subcutaneous administration as the preferred route.

Injections should be given using 16- to 18-gauge needles, regardless of administration route. Needles 1/2 to 3/4 inches in length are suggested for SC injections, which should be given under the loose skin in front of the shoulder. A 1 1/2-inch needle is suggested for IM injections. The only area for IM injections is the muscular region of the neck.

1. Dectomax is not approved to use in sheep and goats, but can be given to sheep/goats only under the supervision of a veterinarian.
1. The active ingredient in this product is
   a. Dectomax   b. Dictyocaulaus
   c. Doramectin   d. None of the above

2. How much of this product should be given to a 775-pound Charolais steer?
   a. 5 mL   b. 7 mL
   c. 9 mL   d. 77 mL

3. When determining dosage rates, 1 cc is equal to 1.5 mL.
   a. True   b. False

4. This product is only available by a veterinary prescription.
   a. True   b. False

5. The preferred route of administration of Dectomax is
   a. SC   b. IM
   c. IV   d. All are appropriate

6. This product is considered an
   a. Antibiotic   b. Analgesic
   c. Anthelmintic   d. None of the above

7. This product is effective against internal parasites, but not external parasites.
   a. True   b. False

8. Regardless of route of administration, all injections should be given in the
   a. Rump   b. Loin
   c. Over the rib   d. Neck

9. What size needle should be used for an IM injection of this product?
   a. 14 gauge   b. 18 gauge
   c. 20 gauge   d. All of the above are appropriate

10. Dectomax may be given to all classes of beef cattle.
    a. True   b. False

11. For a SC injection of this product, the dosage for a 660 pound steer would be
    a. 2 mL   b. 4 mL
    c. 6 mL   d. 8 mL

12. If a dose of 15 ml of this product is indicated, how many injection sites should be used?
    a. 1   b. 2
    c. 3   d. 4

13. How much of this product should be given to a 110-pound wether?
    a. 1 mL   b. 2 mL
    c. 3 mL   d. Not labeled for wethers

14. What length needle is recommended for an IM injection of this product?
    a. 0.5 inch   b. 0.75 inch
    c. 1.5 inch   d. IM injections are not appropriate with this product

15. When is it acceptable to increase the dosage of this product?
    a. Never   b. False
    c. Sales rep can approve   d. The first use of product only

16. Health-related records, including the use of Dectomax should always be kept.
    a. True   b. False

17. Dectomax should be effective against *Ostertagia ostertagi* for
    a. 7 days   b. 14 days
    c. 21 days   d. 28 days

18. How much of this product should be given to an 1100-pound, mid-gestation Angus cow?
    a. 5 mL   b. False
    c. 15 mL
20. For an IM injection of this product, the dosage for a 330 pound heifer would be
   a. 2 ml
   b. 3 ml
   c. 6 ml
   d. Not appropriate for heifers

21. After using this product, the needle should be
   a. Discarded in the trash
   b. Discarded in the lagoon
   c. Disinfected with soap & reused
   d. Discarded in appropriate Sharps container

22. A fecal egg count is a method that can be used to determine if this product is even necessary.
   a. True
   b. False

23. This product is effective against gastrointestinal roundworms and lungworms, but not eyeworms.
   a. True
   b. False

24. Per label, this product should not be given with any other medications.
   a. True
   b. False

25. Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.
   a. True
   b. False
may result in local tissue reaction which persists beyond 28 days. This may result in trim loss of edible tissue at slaughter. Tissue reaction at injection sites other than the neck is likely to be more severe.

**RESIDUE WARNINGS:** Animals intended for human consumption must not be slaughtered within 28 days of the last intramuscular treatment. Animals intended for human consumption must not be slaughtered within 38 days of subcutaneous treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk residues. A withdrawal period has not been established in preruminating calves. Do not use in calves to be processed for veal.

**ADVERSE REACTIONS:** Inappetence, decreased water consumption, or diarrhea may occur transiently following treatment.

**MICROBIOLOGY:** Florfenicol is a synthetic, broad-spectrum antibiotic active against many Gram-negative and Gram-positive bacteria isolated from domestic animals.

**STORAGE INFORMATION:** Store between 2°-30°C (36°-86°F). Refrigeration is not required.

**HOW SUPPLIED:** NUFLOR is packaged in 100 mL, 250 mL, and 500 mL glass sterile multiple-dose vials.

### Animal Treatment Record Sheet
**Date:** 9/16/17

<table>
<thead>
<tr>
<th>#</th>
<th>Species</th>
<th>Animal ID</th>
<th>Stage</th>
<th>Weight</th>
<th>Product</th>
<th>Route</th>
<th>Dosage</th>
<th>Withdrawal Time</th>
<th>Given By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Beef steer</td>
<td>1610</td>
<td>Weaned</td>
<td>600 lbs</td>
<td>NuFlor</td>
<td>IM</td>
<td>18 mL</td>
<td>28 days</td>
<td>TLM</td>
</tr>
<tr>
<td>2</td>
<td>Beef heifer</td>
<td>1708</td>
<td>Calf</td>
<td>400 lbs</td>
<td>NuFlor</td>
<td>IM</td>
<td>24 mL</td>
<td>38 days</td>
<td>TLM</td>
</tr>
<tr>
<td>3</td>
<td>Beef steer</td>
<td>1701</td>
<td>Calf</td>
<td>300 lbs</td>
<td>NuFlor</td>
<td>SubQ</td>
<td>18 mL</td>
<td>38 days</td>
<td>TLM</td>
</tr>
<tr>
<td></td>
<td>Dairy heifer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Dairy heifer</td>
<td>1625</td>
<td>Weaned</td>
<td>700 lbs</td>
<td>NuFlor</td>
<td>IM</td>
<td>21 mL</td>
<td>28 days</td>
<td>TLM</td>
</tr>
<tr>
<td>5</td>
<td>Dairy heifer</td>
<td>1635</td>
<td>Weaned</td>
<td>800 lbs</td>
<td>NuFlor</td>
<td>IM</td>
<td>24 mL</td>
<td>28 days</td>
<td>TLM</td>
</tr>
</tbody>
</table>

1. The trade name for this product is  
   a. Banamine  
   b. Nuflor  
   c. Florfenicol  
   d. Tylenol

2. This product is available over the counter.  
   a. True  
   b. False

3. This product may be given  
   a. SubQ  
   b. IV  
   c. IM  
   d. Only A and C

4. This product may be given to non-lactating swine.  
   a. True  
   b. False

5. If this product is given intramuscularly, the withdrawal time is  
   a. 18 days  
   b. 28 days  
   c. 38 days  
   d. 48 days

6. Which of the treatments is an extra-label use of the listed substance?  
   a. Treatment 1  
   b. Treatment 2  
   c. Treatment 3  
   d. Treatment 4  
   e. Treatment 5

7. This product is considered an  
   a. Antibiotic  
   b. Analgesic  
   c. Anthelmintic  
   d. None of the above

8. For the treatment of BRD, _____ of this product should be given IM to a 500 pound steer.  
   a. 3 ml  
   b. 6 ml  
   c. 30 ml
b. 15 ml
d. 45 ml
9. If the injection is given SubQ, no second administration is needed.
a. True  b. False
10. This product may cause tissue irritation and damage, resulting in trim loss.
a. True  b. False
11. When would it be acceptable to market animal 1610?
a. September 16  c. October 14
b. September 17  d. October 24
12. What size needle should be used for a SubQ injection of this product?
a. 14 gauge  c. 20 gauge
b. 18 gauge  d. All of the above are appropriate
13. This product may be given to calves intended to be processed for veal.
a. True  b. False
14. This product does not require storage in a refrigerator.
a. True  b. False
15. For a SubQ injection of this product, the dosage for a 1000 pound beef cow would be
a. 6 ml  c. 60 ml
b. 30 ml  d. Not appropriate for beef cows
16. Regardless of the amount, it is appropriate to give the entire dosage in the same injection site.
a. True  b. False
17. After an animal is treated with this product, it should be identified in such a way as to ensure it remains on
the farm through the withdrawal time.
a. True  b. False
18. A veterinarian may prescribe a higher dosage for this product.
a. True  b. False
19. What is the most appropriate location for Treatment 5?
a. Neck region  c. Rump
b. Loin  d. Feed
20. This product does present a mild risk to humans. Care should be taken.
a. True  b. False
21. This product is not labeled for the treatment of
a. Footrot  c. BVD
b. BRD  d. None of the above
22. This product may cause
a. Decreased appetite  c. Decreased water intake
b. Diarrhea  d. All of the above
23. After use of this product, the needle should be
a. Discarded in the trash  c. Disinfected with soap and used again
b. Discarded in a lagoon  d. Discarded in appropriate Sharps container
24. If the withdrawal time is doubled, this product can be administered to lactating dairy cows.
a. True  b. False
25. Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.
a. True  b. False

2016 Livestock Skillathon – Quality Assurance Quiz – Senior Division – Individual
MoorMan’s® ShowTec® Developer TV/Paylean®*
Medicated: A Complete Feed for Finishing Pigs Being Fed for Exhibition
Guaranteed Analysis
Crude Protein, min ...................18.0%  Phosphorus (P), min ................... 0.6%
Lysine, min .........................1.0%  Salt (NaCl), min ......................... 0.2%
Crude Fat, min ..................2.5%  
Crude Fiber, max ..................4.0%  
Calcium (Ca), min ..................0.7%  
Calcium (Ca), max ..................1.2%  
Salt (NaCl), max ..................0.7%  
Selenium (Se), min ..............0.3 ppm  
Zinc (Zn), min ...............155 ppm  
Biotin, min ..................0.14 mg/lb

Indications
For increased rate of weight gain, improved feed efficiency and increased carcass leanness in finishing swine, weighing not less than 150 lb, fed a complete ration containing at least 16% crude protein for the last 45 to 90 lb of gain prior to slaughter; for control of porcine proliferative enteropathies (ileitis) associated with *Lawsonia intracellularis*; for control of swine dysentery associated with *Brachyspira hyodysenteriae*.

Active Drug Ingredients
Ractopamine hydrochloride ....................9 grams/ton  
Tylosin ................................ 100 grams/ton

Feeding Directions: MoorMan’s ShowTec Developer TY/Paylean is a complete feed specifically formulated for pigs fed for exhibition. Feed continuously as the sole ration for 21 days to finishing swine weighing not less than 150 lb for the last 45 to 90 lb (group average) of weight gain prior to slaughter. Pigs must be fed in an ad libitum (full feed) feeding program.

CAUTION: Ractopamine may increase the number of injured and/or fatigued pigs during marketing. Not for use in breeding swine. Do not use in any finished feed containing in excess of 2% bentonite.

WARNING: The active ingredient in Paylean, ractopamine hydrochloride, is a beta-adrenergic agonist. Individuals with cardiovascular disease should exercise special caution to avoid exposure. Not for use in humans. Keep out of the reach of children. Operators should wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse eyes thoroughly with water. If irritation persists, seek medical attention.

Features: Promotes increased primal and lean cut yields resulting in more meat–less fat with no effect on pork quality; improved feed efficiency; increased rate of weight gain; no withdrawal.

Ingredients: Ground Corn, Dehulled Soybean Meal, Meat and Bone Meal, Soybean Hulls, Lignin Sulfonate, Monocalcium Phosphate, Dicalcium Phosphate, Fish Meal, Calcium Carbonate, Salt, Blood Meal, Sodium Propionate (A Preservative), Dried Whey, Copper Sulfate, Natural and Artificial Flavors, Extracted Citric Acid Presscake, Wheat Dextrin, Yeast Culture (Saccharomyces cerevisiae), Diatomaceous Earth, L-Lysine, Choline Chloride, Zinc Amino Acid Complex, Manganese Amino Acid Complex, Zinc Oxide, Ferrous Sulfate, Defluorinated Phosphate, Vitamin E Supplement, Mineral Oil, Biotin, Manganese Sulfate, Zinc Sulfate, Niacin Supplement, Calcium Pantothenate, Magnesium Oxide, Vitamin A Supplement, Menadione Dimethylpyrimidinol Bisulfite, Riboflavin Supplement, Vitamin D3 Supplement, Vitamin B12 Supplement, Calcium Iodate, Sodium Selenite.

**LEVASOLE® SOLUBLE PIG WORMER**; Intervet/Schering-Plough Animal Health
(levamisole hydrochloride); Anthelmintic; For Use in Drinking Water
This bottle contains 18.15 grams of levamisole hydrochloride activity which will treat the following: 200 - 25 lb. pigs, or 100 - 50 lb. pigs, or 50 - 100 lb. pigs, or 25 - 200 lb. pigs.

RECOMMENDATIONS: Levasole (levamisole hydrochloride) is a broad-spectrum anthelmintic, and is effective against the following nematode infections in swine: Large Roundworms: (*Ascaris suum*); Nodular Worms: (*Oesophagostomum* spp.); Lungworms: (*Metastrongylus* spp.); and Intestinal Threadworms: (*Strongyloides ransomi*).

WARNING: Keep out of reach of children.

DIRECTIONS FOR PREPARING SOLUBLE PIG WORMER SOLUTION: When you are ready to deworm pigs, add water to the powder in this bottle up to the 500 mL mark. Agitate to mix thoroughly before using. If any solution is left over, it may be stored for up to 3 months in the tightly capped bottle; agitate well before using.

DIRECTIONS FOR USE: Witholding water from pigs prior to treatment is not necessary for optimum anthelmintic efficacy and is not recommended during hot weather. Add 10 mL (2 teaspoonfuls) of the solution from the bottle to 1 gallon of water; mix thoroughly. Allow one gallon of medicated water for each 100 pounds of body weight of pigs to be treated. No other source of water should be offered. As soon as pigs have consumed all of the medicated water resume the use of regular water.

NOTE: Careful estimates of pig weights are essential for the proper performance of this product. Pigs maintained under conditions of constant worm exposure may require retreatment within 4-5 weeks after the first treatment due to reinfection.

CAUTION: Consult veterinarian before administering levamisole to sick swine.

Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism. Salivation or muzzle foam may be observed. The reaction is occasionally seen and will disappear in a short time after the medication. If pigs are infected with mature lungworms, coughing and vomiting may be observed soon after medicated
water is consumed. The reaction is due to the expulsion of worms from the lungs and will be over in several hours. Follow
the recommended dosage carefully to assure the removal of worms and avoid an overdose of levamisole.

**WARNING:** Do not administer within 72 hours of slaughter for food.

Your 225 barrow has been on the above feed *(MoorMan’s® ShowTec® Developer TY/Paylean®)* for the past 14 days
and was administered the above dewormer *(LEVASOLE® SOLUBLE PIG WORMER)* yesterday (12 hours ago).

Answer the below 25 questions using the above two labels.

1. Since both of these products are considered medication, they are available by veterinary prescription only.
   a. True
   b. False

2. The anthelmintic listed may be given
   a. In feed
   b. Intravenously
   c. In water
   d. Intramuscularly

3. What is the active ingredient in the ShowTec Developer feed?
   a. Tylosin
   b. Levamisole
   c. Ractopamine
   d. Only A and C

4. Since neither product carries a withdrawal period, your barrow is cleared to be harvested at any time.
   a. True
   b. False

5. The legal maximum Crude Protein level of the above medicated feed is 18%.
   a. True
   b. False

6. By using Levasole, under no conditions will retreatment will be needed.
   a. True
   b. False

7. How many gallons of Levasole mixed solution should be provided to your barrow?
   a. 1.5 gallons
   b. 2 gallons
   c. 1.75 gallons
   d. 2.25 gallons

8. If your target harvest weight for your barrow is 265 pounds, how long should the feed above be used?
   a. For 21 days from app. 175-220 pounds until harvest at 265 pounds
   b. Beginning at 150 pounds for as long as it takes to get to 265 pounds
   c. Beginning at 175 pounds for as long as it takes to get to 265 pounds
   d. From birth to harvest
   e. Not appropriate to be fed to barrows

9. Based on the two labels, it is a reasonable assumption that Banamine should not be used on this animal while using
   these two medicated products at the same time.
   a. True
   b. False

10. The two main ingredients in the ShowTec Developer feed are
    a. Tylosin and Paylean
    b. Ground Corn and Soybean Hulls
    c. Ground corn and Meat and bone meal
    d. Ground corn and Dehulled soybean meal

11. Levasole is designed to ____________ disease.
    a. Treat
    b. Prevent

12. By using the ShowTec Developer feed, at marketing, you should be aware of potential problems with your barrow,
    including
    a. Dead pigs
    b. Lightweight pigs
    c. Injured and/or fatigued pigs
    d. None of the above

13. Feeding the complete feed above to your pig from 100 pounds until reaching their target market weight is
    a. Acceptable use of feed
    b. Extra-label use of feed

14. Withholding water prior to treatment with Levasole is indicated except for extreme hot weather.
    a. True
    b. False

15. Both of the above products can be purchased OTC.
    a. True
    b. False

16. The minimum amount of Calcium by law that can actually be in the ShowTec Developer feed is
    a. 0.2%
    b. 0.7%
    c. 0.9%
    d. 1.2%

17. Which parasite if Levasole not recommended for the control of?
    a. Roundworms
    b. Brownworms
    c. Threadworms
    d. Lungworms

18. If your target breeding weight for your gilt is 305 pounds, how long should the feed above be used?
a. For 21 days from app. 215-260 pounds until reaching 305 pounds  
b. Beginning at 225 pounds for as long as it takes to get to 305 pounds  
c. Beginning at 250 pounds for as long as it takes to get to 305 pounds  
d. From birth to breeding  
e. Not appropriate to be fed to breeding gilts

19. Levasole can be used on any swine, any age and any weight, regardless of health status with no limitation or concern.  
a. True  
b. False

20. Both products carry some human health risk, thus appropriate care should be taken with the storage and handling of the products.  
a. True  
b. False

21. Based on the two labels, it is a reasonable assumption there is no problem with using these two medicated products at the same time.  
a. True  
b. False

22. Which of the above two products will control swine dysentery?  
a. Anthelmintic  
b. Medicated feed

23. After being mixed with water, Levasole solution must be used immediately and any not used must be discarded.  
a. True  
b. False

24. ShowTec Developer feed may be fed to sheep.  
a. True  
b. False

25. Use of these products is directed by PQA guidelines, which ensure food safety and animal well-being.  
a. True  
b. False

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2017 Livestock Skillathon – Quality Assurance Quiz – Team Activity

Use the below 3 product labels and the Animal Treatment Record Sheet to answer the 25 questions on the Team Scantron. Only one sheet should be completed per team.

**MoorMan’s® ShowTec® Developer TY/Paylean®* – Medicated – Complete Feed for Finishing Pigs for Exhibition**

**Guaranteed Analysis**

<table>
<thead>
<tr>
<th>Component</th>
<th>Minimum/Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Protein</td>
<td>18.0% min</td>
</tr>
<tr>
<td>Lysine</td>
<td>1.0% min</td>
</tr>
<tr>
<td>Crude Fat</td>
<td>2.5% min</td>
</tr>
<tr>
<td>Crude Fiber</td>
<td>4.0% max</td>
</tr>
<tr>
<td>Calcium (Ca) min</td>
<td>0.7%</td>
</tr>
<tr>
<td>Calcium (Ca) max</td>
<td>1.2%</td>
</tr>
<tr>
<td>Phosphorus (P) min</td>
<td>0.6%</td>
</tr>
<tr>
<td>Salt (NaCl) min</td>
<td>0.2%</td>
</tr>
<tr>
<td>Salt (NaCl) max</td>
<td>0.7%</td>
</tr>
<tr>
<td>Selenium (Se) min</td>
<td>0.3 ppm</td>
</tr>
<tr>
<td>Zinc (Zn) min</td>
<td>155 ppm</td>
</tr>
<tr>
<td>Biotin</td>
<td>0.14 mg/lb</td>
</tr>
</tbody>
</table>

**Indications:** For increased rate of weight gain, improved feed efficiency and increased carcass leanness in finishing swine, weighing not less than 150 lb, fed a complete ration containing at least 16% crude protein for the last 45 to 90 lb of gain prior to slaughter; for control of porcine proliferative enteropathies (ileitis) associated with *Lawsonia intracellularis*; for control of swine dysentery associated with *Brachyspira hyodysenteriae*.

**Active Drug Ingredients:**

- Ractopamine hydrochloride: 9 grams/ton
- Tylosin: 100 grams/ton

**Feeding Directions:** MoorMan’s ShowTec Developer TY/Paylean is a complete feed specifically formulated for pigs fed for exhibition. Feed continuously as the sole ration for 21 days to finishing swine weighing not less than 150 lb for the last 45 to 90 lb (group average) of weight gain prior to slaughter. Pigs must be fed in an ad libitum feeding program.
CAUTION: Ractopamine may increase the number of injured and/or fatigued pigs during marketing. Not for use in breeding swine. Do not use in any finished feed containing in excess of 2% bentonite.

WARNING: The active ingredient in Paylean, ractopamine hydrochloride, is a beta-adrenergic agonist. Individuals with cardiovascular disease should exercise special caution to avoid exposure. Not for use in humans. Keep out of the reach of children. Operators should wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse eyes thoroughly with water. If irritation persists, seek medical attention.

Features: Promotes increased primal and lean cut yields resulting in more meat–less fat with no effect on pork quality; improved feed efficiency; increased rate of weight gain; no withdrawal.

Ingredients: Ground Corn, Dehulled Soybean Meal, Meat and Bone Meal, Soybean Hulls, Lignin Sulfonate, Monocalcium Phosphate, Dicalcium Phosphate, Fish Meal, Calcium Carbonate, Salt, Blood Meal, Sodium Propionate (A Preservative), Dried Whey, Copper Sulfate, Natural and Artificial Flavors, Extracted Citric Acid Presscake, Wheat Dextrin, Yeast Culture (Saccharomyces cerevisiae), Diatomaceous Earth, L-Lysine, Choline Chloride, Zinc Amino Acid Complex, Manganese Amino Acid Complex, Zinc Oxide, Ferrous Sulfate, Defluorinated Phosphate, Vitamin E Supplement, Mineral Oil, Biotin, Manganese Sulfate, Zinc Sulfate, Niacin Supplement, Calcium Pantothenate, Magnesium Oxide, Vitamin A Supplement, Menadione Dimethylpyrimidinol Bisulfite, Riboflavin Supplement, Vitamin D3 Supplement, Vitamin B12 Supplement, Calcium Iodate, Sodium Selenite.

BANAMINE®-S INJECTABLE SOLUTION – Intervet/Schering-Plough Animal Health – (FLUNIXIN MEGLUMINE) - 50 mg/mL


CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

DESCRIPTION: Each milliliter of BANAMINE-S Injectable Solution contains flunixin meglumine equivalent to 50 mg flunixin, 0.1 mg edetate disodium, 2.5 mg sodium formaldehyde sulfoxylate, 4.0 mg diethanolamine, 207.2 mg propylene glycol; 5.0 mg phenol as preservative, hydrochloric acid, water for injection q.s.

PHARMACOLOGY: Flunixin meglumine is a potent, non-narcotic, non-steroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test. Flunixin is known to persist in inflammatory tissues and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations. Therefore, prediction of drug concentrations based upon estimated plasma terminal elimination half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

INDICATION: BANAMINE -S Injectable is indicated for control of pyrexia associated with swine respiratory disease.

DOSE AND ADMINISTRATION: The recommended dose for swine is 2.2 mg/kg (1 mg/lb; 2 mL per 100 lbs) body weight given by a single intramuscular administration. The injection should be given only in the neck musculature with a maximum of 10 mL per site. Note: Intramuscular injection may cause local tissue irritation and damage. In an injection-site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

CONTRAINDICATIONS: There are no known contraindications in swine when used as directed. Do not use showing hypersensitivity to flunixin meglumine. Use judiciously when renal impairment or gastric ulceration is suspected.

RESIDUE WARNINGS: Swine must not be slaughtered for human consumption within 12 days of the last treatment.

PRECAUTIONS: As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since many
NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of flunixin meglumine with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided. Not for use in breeding swine. The reproductive effects of BANAMINE-S Injectable Solution have not been investigated in this class of swine. Intramuscular injection may cause local tissue irritation and damage. In an injection site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

SAFETY: Flunixin was mildly irritating at the injection sites. No other flunixin-related changes (adverse reactions) were noted in swine administered a 1X (2.2 mg/kg; 1.0 mg/lb) dose for 9 days. Minimal toxicity manifested itself as statistically significant increased spleen weight at elevated doses (5X or higher daily for 9 days) with no change in normal microscopic architecture.

HOW SUPPLIED: BANAMINE-S Injectable Solution, 50 mg/mL, is available in 100-mL, multi-dose vial. Store between 2° and 30°C (36° and 86°F).

SAFE-GUARD® MEDICATED DEWORMER FOR SWINE (EZ SCOOP®) - Intervet/Merck Animal Health - (fenbendazole)

Type B Medicated Feed; EZ Scoop® (Scoop Included)

3 TO 12 DAY TREATMENT REGIMEN FOR THE REMOVAL OF:

Lungworms: (Metastrongylus apri, M. pudendotectus). Gastrointestinal Worms: Adult and larvae (L3, L4 stages -liver, lung, intestinal forms) large roundworms (Ascaris suum), nodular worms (Oesophagostomum dentatum, O. quadrispinulatum), small stomach worms (Hyostrostrongylus rubidus), adult and larvae (L2, L3, L4 stages-intestinal mucosal forms) whipworms (Trichuris suis). Kidneyworms: Adult and larvae (Stephanurus dentatus).

DOSAGE REGIMEN: 9 mg fenbendazole per kg body weight (4.08 mg fenbendazole per lb body weight) over a period of 3 to 12 days.

ACTIVE DRUG INGREDIENT:

| Fenbendazole | 1.8% (8.172 g/lb) |

GUARANTEED ANALYSIS:

| Calcium (Ca) (min) | 20.0% |
| Calcium (Ca) (max) | 24.0% |

OTHER INGREDIENTS: Rice Hulls, Calcium Carbonate and Mineral Oil.

DIRECTIONS FOR USE: Safe-Guard® EZ Scoop® premix should be mixed to a concentration of 10 to 300 grams fenbendazole per ton of feed prior to feeding.

For Group Feeding (Pigs, Gilts, Sows or Boars): Examples of Mixing and Feeding Rates for Safe-Guard® EZ Scoop® Premix:

<table>
<thead>
<tr>
<th>Pig Wt. (lbs)</th>
<th>Average daily feed consumption (lbs)</th>
<th>Treatment Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lbs premix</td>
<td>Treats approximately:</td>
</tr>
<tr>
<td>50</td>
<td>3.20</td>
<td>5.2</td>
</tr>
<tr>
<td>75</td>
<td>4.25</td>
<td>5.8</td>
</tr>
<tr>
<td>100</td>
<td>5.30</td>
<td>6.2</td>
</tr>
<tr>
<td>150</td>
<td>6.80</td>
<td>7.3</td>
</tr>
<tr>
<td>200</td>
<td>8.00</td>
<td>8.3</td>
</tr>
</tbody>
</table>
For Individual 400 lb Sow Feeding: Mix 1 level scoop (1.07 ounces) of Safe-Guard® EZ Scoop® premix into 4 to 6 lbs of an individual 400 lb sow’s daily ration and feed once daily for 3 consecutive days. There is no pre-slaughter withdrawal period as Safe-Guard® EZ Scoop® can be fed to day of slaughter. CONSULT YOUR VETERINARIAN FOR ASSISTANCE IN THE DIAGNOSIS, TREATMENT AND CONTROL OF PARASITISM. Store at or below 25°C (77°F).

Animal Treatment Record Sheet
Date: 9/16/17

<table>
<thead>
<tr>
<th>#</th>
<th>Species</th>
<th>Animal ID</th>
<th>Gender</th>
<th>Weight</th>
<th>Product</th>
<th>Route</th>
<th>Dosage</th>
<th>Withdrawal Time</th>
<th>Given By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Swine</td>
<td>1-2</td>
<td>Sow</td>
<td>550 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>11 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>2</td>
<td>Swine</td>
<td>3-5</td>
<td>Barrow</td>
<td>300 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>6 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>3</td>
<td>Swine</td>
<td>3-6</td>
<td>Gilt</td>
<td>350 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>7 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>4</td>
<td>Swine</td>
<td>2-3</td>
<td>Barrow</td>
<td>250 lbs</td>
<td>Banamine</td>
<td>SubQ</td>
<td>5 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>5</td>
<td>Swine</td>
<td>9-7</td>
<td>Barrow</td>
<td>200 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>4 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
</tbody>
</table>

1. All three products may be used simultaneously.
   a. True  
   b. False

2. The anthelmintic listed is administered
   a. In feed  
   b. Intravenously  
   c. In water  
   d. Intramuscularly

3. Assuming a barrow is fed ShowTec and Safeguard, if it does not show up on the Treatment Record Sheet, when can it be marketed?
   a. September 16  
   b. September 20  
   c. September 28  
   d. October 8

4. Which of the above products may only be used by veterinary prescription?
   a. Banamine  
   b. ShowTech Developer feed  
   c. Safeguard  
   d. None of the above

5. By using the ShowTec Developer feed, at marketing, you should be aware of potential problems with your barrow, including
   a. Dead pigs  
   b. Lightweight pigs  
   c. Injured and/or fatigued pigs  
   d. None of the above

6. The minimum amount of Calcium by law that can actually be in the ShowTec Developer feed is
   a. 0.2%  
   b. 0.7%  
   c. 0.9%  
   d. 1.2%

7. Which of the three products is considered an antibiotic?
   a. Banamine  
   b. Ractopamine  
   c. Safeguard  
   d. None of the above

8. Which of the treatments is an extra-label use of the listed substance?
   a. Treatment 1  
   b. Treatment 2  
   c. Treatment 4  
   d. Treatments 2 & 4

9. The withdrawal period for Safeguard is
   a. 0 days  
   b. 7 days  
   c. 12 days  
   d. 21 days

10. When can be potential litter mates be marketed?
    a. September 16  
    b. September 20  
    c. September 28  
    d. October 8

11. The dosage for Banamine can be increased by order of
12. Which of the three products is considered an anthelmintic?
   a. Banamine  
   b. ShowTech Developer feed  
   c. Safeguard  
   d. None of the above

13. After use of this product, the needle should be
   a. Discarded in the trash  
   b. Disinfected and reused  
   c. Discarded in lagoon  
   d. Discarded in appropriate Sharps container

14. How much Banamine should be given to a 150 pound barrow?
   a. 2 mL  
   b. 3 mL  
   c. 4 mL  
   d. 5 mL

15. When group feeding Safeguard to 100 pound barrows, how many pigs can be treated if 1.6 pounds are mixed in the feed?
   a. 20 pigs  
   b. 24 pigs  
   c. 31 pigs  
   d. 39 pigs

16. After a pig is treated with Banamine, it should be identified in such a way as to ensure it remains on the farm through the withdrawal time.
   a. True  
   b. False

17. The two main ingredients in the ShowTec Developer feed are
   a. Tylosin and Paylean  
   b. Dehulled Soybean meal and Soybean hulls  
   c. Ground corn and Soybean hulls  
   d. Ground corn and Dehulled soybean meal

18. Which of the three products is considered an analgesic?
   a. Banamine  
   b. ShowTech Developer feed  
   c. Safeguard  
   d. None of the above

19. How much Banamine should be given to a 600 pound sow?
   a. 10 mL  
   b. 12 mL  
   c. 14 mL  
   d. Not appropriate for breeding swine

20. The trade name for Ractopamine in ShowTech developer feed is
   a. Tylosin  
   b. ShowTech  
   c. Paylean  
   d. Safeguard

21. How many separate injections should be used for Treatment 1?
   a. 1  
   b. 2  
   c. 3  
   d. 4

22. Safeguard is appropriate for all classes of swine.
   a. True  
   b. False

23. ShowTech developer feed should be fed for the last _______ days prior to slaughter.
   a. 14 days  
   b. 21 days  
   c. 28 days  
   d. should be fed from 150 lbs until harvest

24. Banamine and Safeguard both require refrigeration to remain effective.
   a. True  
   b. False

25. Body condition scoring is useful to assess the adequacy of the
   a. Vaccination program  
   b. Reproductive program  
   c. Genetic program  
   d. Nutritional program

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2016 Livestock Skillathon – Quality Assurance Quiz – Team Activity

Use the below 2 product labels and the Animal Treatment Record Sheet to answer the 25 questions on the Team Scantron. Only one sheet should be completed per team.

BANAMINE®-S INJECTABLE SOLUTION - Intervet/Schering-Plough Animal Health
(FLUNIXIN MEGLUMINE) 50 mg/mL


Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

Description: Each milliliter of BANAMINE-S Injectable Solution contains flunixin meglumine equivalent to 50 mg flunixin, 0.1 mg edetate disodium, 2.5 mg sodium formaldehyde sulfoxylate, 4.0 mg diethanolamine, 207.2 mg propylene glycol; 5.0 mg phenol as preservative, hydrochloric acid, water for injection q.s.

Pharmacology: Flunixin meglumine is a potent, non-narcotic, non-steroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test. Flunixin is known to persist in inflammatory tissues and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations. Therefore, prediction of drug concentrations based upon estimated plasma terminal elimination half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

The pharmacokinetic profiles were found to follow a 2-compartmental model, although a deep (third) compartment was observed in some animals. The mean terminal elimination half-life (β half-life) of flunixin after a single intramuscular injection of Banamine (2.2 mg/kg) to pigs was between 3 and 4 hours. The mean observed maximum plasma concentration was 2944 ng/mL, achieved at a mean time of approximately 0.4 hours. The mean AUC(0-LOQ) was 6431 ng*hr/mL. Following IM administration of flunixin, quantifiable drug concentration could be measured up to 18 hours post dose. The mean volume of distribution was 2003 mL/kg and the mean total clearance was 390 mL/hr/kg. The mean absolute bioavailability of flunixin following an intramuscular injection in the neck was 87%.

Indication: BANAMINE-S Injectable Solution is indicated for the control of pyrexia associated with swine respiratory disease.

Dose & Administration: The recommended dose for swine is 2.2 mg/kg (1 mg/lb; 2 mL per 100 lbs) body weight given by a single intramuscular administration. The injection should be given only in the neck musculature with a maximum of 10 mL per site. Note: Intramuscular injection may cause local tissue irritation and damage. In an injection-site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

Contraindications: There are no known contraindications to this drug in swine when used as directed. Do not use in animals showing hypersensitivity to flunixin meglumine. Use judiciously when renal impairment or gastric ulceration is suspected.

Residue Warnings: Swine must not be slaughtered for human consumption within 12 days of the last treatment.

Precautions: As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since many NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of flunixin meglumine with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided.

Not for use in breeding swine. The reproductive effects of BANAMINE-S Injectable Solution have not been investigated in this class of swine. Intramuscular injection may cause local tissue irritation and damage. In an injection site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

Safety: Flunixin was mildly irritating at the injection sites. No other flunixin-related changes (adverse reactions) were noted in swine administered a 1X (2.2 mg/kg; 1.0 mg/lb) dose for 9 days. Minimal toxicity manifested itself as statistically significant increased spleen weight at elevated doses (5X or higher daily for 9 days) with no change in normal microscopic architecture.

How Supplied: BANAMINE-S Injectable Solution, 50 mg/mL, is available in 100-mL, multi-dose vial.

Store between 2° and 30°C (36° and 86°F).

MATRIX® (altrenogest)

Drug Facts:

Active ingredients: Altrenogest solution 0.22% (2.2 mg/mL)

Use: For synchronization of estrus in sexually mature gilts that have had at least one estrous cycle. Treatment with altrenogest solution 0.22% results in estrus (standing heat) 4 to 9 days after completion of the 14-day treatment period.
Caution: Federal law prohibits extra-label use of this drug to enhance food and/or fiber production in animals.

Do Not Use: In gilts having a previous or current history of uterine inflammation (i.e., acute, subacute or chronic endometritis).

WARNINGS:

User/Handler Safety: Keep this and all medication out of the reach of children. Avoid skin contact. Wear vinyl, polyethylene, neoprene, butyl or nitrile protective gloves when handling this product. Pregnant women or women who suspect they are pregnant should not handle MATRIX® (altrenogest) Solution 0.22%. Women of childbearing age should exercise extreme caution when handling this product. Accidental absorption could lead to a disruption of the menstrual cycle or prolongation of pregnancy. Wash off accidental spillage on the skin immediately with soap and water.

People who should not handle this product:
1. Women who are or suspect they are pregnant.
2. Anyone with thrombophlebitis or thromboembolic disorders or with a history of these events.
3. Anyone with cerebral-vascular or coronary-artery disease.
4. Women with known or suspected carcinoma of the breast.
5. People with known or suspected estrogen-dependent neoplasia.
6. Women with undiagnosed vaginal bleeding.
7. People with benign or malignant tumors which developed during the use of oral contraceptives or other estrogen containing products.
8. Anyone with liver dysfunction or disease.

Accidental exposure: Altrenogest is readily absorbed from contact with the skin. In addition, this oil based product can penetrate porous gloves. Altrenogest should not penetrate intact vinyl, polyethylene, neoprene, butyl or nitrile protective gloves; however, if there is leakage (i.e., pinhole, spillage, etc.) the contaminated area covered by such occlusive materials may have increased absorption. The following measures are recommended in case of accidental exposure.

Skin Exposure: Wash immediately with soap and water.

Eye Exposure: Immediately flush with plenty of water for 15 minutes. Get medical attention.

If Swallowed: Do not induce vomiting. MATRIX® (altrenogest) Solution 0.22% contains an oil. Call a physician. Vomiting should be supervised by a physician because of possible pulmonary damage via aspiration of the oil base. If possible, bring the container and labeling to the physician.

Effects of Overexposure: There has been no human use of this specific product. The information contained in this section is extrapolated from data available on other products of the same pharmacological class that have been used in humans. Effects anticipated are due to the progestational activity of altrenogest. Acute effects after a single exposure are possible; however, continued daily exposure has the potential for more untoward effects such as disruption of the menstrual cycle, uterine or abdominal cramping, increased or decreased uterine bleeding, prolongation of pregnancy and headaches. The oil base may also cause complications if swallowed. In addition, the list of people who should not handle this product is based upon the known effects of progestins used in humans on a chronic basis.

Human Food Safety: Gilts must not be slaughtered for human consumption for 21 days after the last treatment.

Environmental Safety: Place empty drug containers and used syringes, protective gloves or other articles that come in contact with this product in a leak-resistant container for disposal in accordance with applicable Federal, state and local regulations.

Adverse Reactions and Potential Safety Hazards: Underfeeding of MATRIX® may lead to the occurrence of cystic follicles.

When Using This Product: A small percentage (less than 5%) of treated gilts may exhibit estrus (standing heat) during the 14-day treatment period. Gilts nearing estrus at the start of the 14-day treatment period may express estrus early in that period.

Dosage and Directions: While wearing protective gloves, remove shipping cap and seal; replace with enclosed plastic dispensing cap. Remove cover from bottle dispensing tip and connect luer lock syringe (without needle). Draw out appropriate volume of MATRIX® solution. (Note: Do not remove syringe while bottle is inverted as spillage may result.) Detach syringe and replace cover on bottle dispensing tip to prevent leakage. Administer 6.8 mL (15 mg altrenogest) per gilt once daily for 14 consecutive days. Treat gilts on an individual animal basis by top-dressing MATRIX® on a portion of each gilt's daily feed allowance. To produce the desired synchronization of estrus in a group of gilts, treat all of the gilts daily for the same 14-day period. Excessive use of a syringe may cause the syringe to stick; therefore, replace syringe as necessary.

Other Information:

Storage: Store at or below room temperature, 77°F (25°C). Close tightly.
Animal Treatment Record Sheet

Date: 9/17/16

<table>
<thead>
<tr>
<th>#</th>
<th>Species</th>
<th>Animal ID</th>
<th>Gender</th>
<th>Weight</th>
<th>Product</th>
<th>Route</th>
<th>Dosage</th>
<th>Withdrawal Time</th>
<th>Given By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Swine</td>
<td>4-2</td>
<td>Gilt</td>
<td>300 lbs</td>
<td>Matrix</td>
<td>Feed</td>
<td>6.8 mL</td>
<td>21 days</td>
<td>TLM</td>
</tr>
<tr>
<td>2</td>
<td>Swine</td>
<td>5-8</td>
<td>Barrow</td>
<td>200 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>4 mL</td>
<td>12 days</td>
<td>TLM</td>
</tr>
<tr>
<td>3</td>
<td>Swine</td>
<td>4-2</td>
<td>Gilt</td>
<td>300 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>8 mL</td>
<td>12 days</td>
<td>TLM</td>
</tr>
<tr>
<td>4</td>
<td>Swine</td>
<td>6-3</td>
<td>Gilt</td>
<td>250 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>5 mL</td>
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<td>Barrow</td>
<td>275 lbs</td>
<td>Matrix</td>
<td>Feed</td>
<td>6.8 mL</td>
<td>21 days</td>
<td>TLM</td>
</tr>
</tbody>
</table>

1. What species are these two products designed for?
   a. Goat
   b. Sheep
   c. Swine
   d. Beef Cattle

2. What would be the correct dosage of the NSAID for a 200 pound barrow?
   a. 1 mL
   b. 2 mL
   c. 3 mL
   d. 4 mL
   e. Not appropriate for barrows

3. When is it acceptable to market the 5-8 barrow?
   a. September 17
   b. September 18
   c. September 25
   d. September 29
   e. October 8

4. Which of the treatments is an extra-label use of the listed substance?
   a. Treatment 1
   b. Treatment 3
   c. Treatment 5
   d. None of the above
   e. B and C

5. It costs less money to treat disease than it does to prevent disease.
   a. True
   b. False

6. The estrus synchronization substance can be given to barrows to help them grow faster and appear with better conformation.
   a. True
   b. False

7. A barrow that is marketed 10 days after being given the analgesic is likely to
   a. Be worth more money
   b. Have a drug residue
   c. All of the above
   d. None of the above

8. How many Good Production Practices are there in the Youth PQA Plus program?
   a. 8
   b. 9
   c. 10
   d. 11
   e. None of the above

9. What would be the correct dosage of Matrix for a 350 pound gilt?
   a. 3.8 mL
   b. 6.8 mL
   c. 15 mL
   d. 22 mL
   e. Not appropriate for gilts

10. What would be the correct dosage of Matrix for a 150 pound ewe?
    a. 3.8 mL
    b. 6.8 mL
    c. 15 mL
    d. 22 mL
    e. Not appropriate for ewes

11. It would have been acceptable for Treatment 4 to have been given SubQ.
    a. True
    b. False

12. What is the withdrawal time for flunixin?
    a. 12 days
    b. 21 days
    c. 28 days
    d. None of the above

13. What is the most appropriate location for Treatment 2?
    a. Neck region
    b. Loin region
    c. Loin
    d. Feed

14. Both of these products are considered OTC products.
15. It is acceptable to freeze the NSAID for proper long-term storage?
   a. True  b. False

16. Standing heat typically occurs __________ after the conclusion of 14-day treatment of Matrix.
   a. Immediately  c. 4-9 days
   b. 2-4 days  d. 1 month

17. When is it acceptable to market the 4-2 gilt?
   a. September 17  c. September 25  e. October 8
   b. September 18  d. September 29

18. Body condition scoring is useful to assess the adequacy of the
   a. Vaccination program  c. Genetic program
   b. Reproductive program  d. Nutritional program

19. The active ingredient in the synchronization product is
   a. Rotavirus  c. Clostridium
   b. Enterotoxemia  d. Altrenogest

20. A veterinarian could prescribe flunixin for use in sheep.
   a. True  b. False

21. Which of the treatments had too much of the substance given?
   a. Treatment 1  d. Treatment 4
   b. Treatment 2  e. Treatment 5

22. Where should the estrus synchronization product be administered?
   a. Neck  c. Water
   b. Under the skin  d. Feed

23. Which of the following is a way that disease pathogens can spread?
   a. Pets  c. New animals  e. All of the above
   b. Vehicles  d. Humans

24. Which gauge needle is most appropriate for Treatment 5?
   a. 14  c. 20
   b. 16  d. None of the above

25. The dosage is the amount of medication to be given over a week’s time.
   a. True  b. False

QUIZ

2018 Livestock Skillathon – Industry Quiz – Junior Division

1. A drug that can be purchased at a livestock supply store is considered
   a. Prescription  c. Illegal
   b. Over the counter  d. None of the above

2. PSE as it relates to pork carcasses stands for
   a. Pale Stale Exudative  c. Pork Soft Exudative
   b. Pale Soft Exudative  d. Pork Stale Exudative

3. Parturition in goats is called
   a. Lambing  c. Calving
   b. Kidding  d. Farrowing

4. The compartment in a ewe’s stomach that is the fermentation vat is the
   a. Rumen  c. Omasum
   b. Reticulum  d. Abomasum

5. For Sheep, which Quality Grade would be generally considered one grade worse than Choice?
   a. Prime  c. Good
   b. Select  d. Utility
6. On the 1-9 Body Condition Scoring System, a 1 is considered
   a. Thin       c. Ideal
   b. Adequate    d. Obese

7. A feedstuff high in fiber is classified as a
   a. Grain       c. Concentrate
   b. Meal        d. Roughage

8. A polled heifer was
   a. Dehorned after birth   c. Born without horns
   b. Used in a research project   d. None of the above

9. Sheep and beef cattle are known as ruminants and carnivores.
   a. True
   b. False

10. Based on the below Birth Weight EPD’s, which Angus bull should be expected to produce the smallest calves at birth?
    a. 0.1      c. 2.1
    b. 1.1      d. 3.1

11. What is the term for sheep meat harvested from an animal less than one year of age?
    a. Mature lamb  c. Lamb
    b. Chevon       d. Mutton

12. What breed of sheep is best known for out of season breeding?
    a. Dorset       c. Montadale
    b. Southdown    d. None of the above

13. Which is a main product of a beef seedstock operation?
    a. Beef carcasses  c. Show steers
    b. Feeder cattle   d. Breeding bulls

14. The most terminal swine breed below is _________.
    a. Yorkshire  c. Landrace
    b. Duroc      d. None of the above are considered terminal

15. Injections made directly in the vein are called
    a. SQ       c. IM
    b. IV       d. IN

16. The first official beef breed established in the US is
    a. Santa Gertrudis  c. Brangus
    b. Santa Cruz      d. Brahman

17. The presence of a break joint on a sheep carcass signifies
    a. Mutton carcass  c. Lamb carcass
    b. Break carcass   d. None of the above

18. What two breeds make up the composite beef breed known as Balancer?
    a. Angus and Simmental  c. Angus and Limousin
    b. Angus and Gelbvieh   d. Gelbvieh and Limousin

19. Which feedstuff below typically has the most protein?
    a. Cracked corn  c. Soybean meal
    b. Soybean hulls d. Wheat midds
20. What is the gestation period for a sow?
   a. 114 days  c. 278 days
   b. 150 days  d. 325 days

21. A castrated male pig is known as a
   a. Buck  c. Steer
   b. Barrow  d. Wether

22. A beef animal that has extremely straight hindlegs is best described as being
   a. Cow-hocked  c. Structurally sound
   b. Sickle-hocked  d. Post-legged

23. In cattle, a female born twin to a bull is called a _____________.
   a. Heiferette  c. Heifer
   b. Freemartin  d. Barren heifer

24. The typically dressing percentage for beef cattle is
   a. 42%  c. 62%
   b. 52%  d. 72%

25. The typical breeding season for sheep is
   a. January to April  c. August to December
   b. April to July  d. January to December

2017 Livestock Skillathon – Industry Quiz – Junior Division
1. Based on the below Birth Weight EPD’s, which Angus bull should be expected to produce the largest calves at birth?
   a. 0.1  c. 2.1
   b. 1.1  d. 3.1

2. In Sheep, which Quality Grade is generally considered one grade worse than Choice?
   a. Prime  c. Good
   b. Select  d. Utility

3. PSE as it relates to pork carcasses stands for
   a. Pale Stale Exudative  c. Pork Soft Exudative
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4. The typical breeding season for sheep is
   a. January to April  c. August to December
   b. April to July  d. January to December

5. A beef animal that has extremely straight hindlegs is best described as being
   a. Cow-hocked  c. Structurally sound
   b. Sickle-hocked  d. Post-legged
6. Meat from mature sheep is referred to as
   a. Offal  c. Mutton
   b. Lamb  d. Mondor
7. The typically dressing percentage for beef cattle is
   a. 42%  c. 62%
   b. 52%  d. 72%
8. A castrated male pig is known as a
   a. Buck  c. Steer
   b. Barrow  d. Wether
9. The breeds of cattle with origin in Europe such as Charolais, Simmental, and Limousin are usually referred to as
   a. Maternal breeds  c. Commercial breeds
   b. British breeds  d. Continental breeds
10. The removal of all or part of the tail from sheep is referred to as
    a. Castration  c. Dehorning
    b. Notching  d. Docking
11. In cattle, a female born twin to a bull is called a ____________.
    a. Heiferette  c. Heifer
    b. Freemartin  d. Barren heifer
12. Which breed of sheep is known for out of season breeding?
    a. Tunis  c. Southdown
    b. Dorset  d. Columbia
13. What is the breed of beef whose name is also a name of a swine breed?
    a. Galloway  c. Angus
    b. Shorthorn  d. Hereford
14. What is the gestation period for a sow?
    a. 114 days  c. 278 days
    b. 150 days  d. 325 days
15. The two breeds that make up the Brangus breed are
    a. Angus and Hereford  c. Brahman and Angus
    b. Brahman and Shorthorn  d. Angus and Braford
16. Parturition in goats is called
    a. Lambing  c. Calving
    b. Kidding  d. Farrowing
17. On the 1-9 Body Condition Scoring System, a 1 is considered
    a. Thin  c. Ideal
    b. Adequate  d. Obese
18. The period of time when a ewe has lamb(s) nursing is known as
    a. Gestation  c. Maintenance
    b. Lactation  d. Hypocalcemia
19. Which is a main product of a beef seedstock operation?
    a. Beef carcasses  c. Show steers
    b. Feeder cattle  d. Breeding bulls
20. Beef cattle or sheep born without horns are commonly referred to as
    a. Hornless  c. Scurred
    b. Polled  d. Bald
21. The process of placing sperm in the female reproductive tract by some other means than natural insemination is known as
    a. Embryo transfer  c. Artificial insemination
    b. Estrus synchronization  d. Pregnancy testing
22. Which of the following animals is known as a ruminant?
   a. Bull  
   b. Sow  
   c. Mare  
   d. Barrow

23. What is from conception to birth referred to as?
   a. Gestation  
   b. Lactation  
   c. Maintenance  
   d. Hypocalcemia

24. The most maternal swine breed below is ________.
   a. Hampshire  
   b. Duroc  
   c. Landrace  
   d. Spot

25. One common characteristic between Duroc, Hampshire and Berkshire swine is
   a. Color  
   b. Maternal qualities  
   c. Large, floppy ears  
   d. Terminal qualities

2017 Livestock Skillathon – Industry Quiz – Senior Division

1. Parturition in swine is known as
   a. Lambing  
   b. Calving  
   c. Farrowing  
   d. Kidding

2. Which hormone is known to maintain pregnancy?
   a. Estrogen  
   b. Prostaglandin  
   c. Progesterone  
   d. Testosterone

3. The predominant energy source in typical swine finishing diets is
   a. Soybean meal  
   b. Cottonseed meal  
   c. Corn  
   d. Corn gluten feed

4. Which index stresses terminal traits in swine?
   a. SPI  
   b. TSI  
   c. MLI  
   d. All of the above

5. Which of the below compartments of a ruminants stomach functions the most like the gastric, true-stomach of non-ruminants?
   a. Rumen  
   b. Omasum

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6. Which beef EPD is the best indicator of the probability of injecting dystocia in the herd?
   a. Birth weight  c. Yearling weight
   b. Weaning weight d. Carcass weight

7. Between cattle, sheep, pigs, horses and poultry—how many are non-ruminants?
   a. 1  c. 3
   b. 2  d. 4

8. Lining the intestinal wall is_________ that increases the surface area of the intestine and as a result increases absorption.
   a. Papillae  c. Epithelial cells
   b. Duodenal cells  d. Villa

9. What two breeds make up the composite breed Balancer?
   a. Angus and Gelbvieh  c. Red Angus and Brahman
   b. Shorthorn and Angus  d. Shorthorn and Gelbvieh

10. The Polypay breed of sheep was developed from Dorset, Targhee and what other two breeds of sheep?
    a. Hampshire and Rambouillet  c. Hampshire and Finnsheep
    b. Rambouillet and Finnsheep  d. Rambouillet and Southdown

11. What are the three “best” quality grades for beef?
    a. Prime, Choice, Select  c. Prime, Select, Standard
    b. Prime, Select, Good  d. Prime, Choice, Good

12. What is the gestation period for a cow?
    a. 114 days  c. 278 days
    b. 150 days  d. 325 days

13. Which of the below forages would you expect to have the highest Crude Protein level?
    a. Orchardgrass  c. Alfalfa
    b. Tall fescue  d. Timothy

14. Which of the following management or selection programs would best accomplish the goal of improving the muscularity and carcass characteristics of feeder calves on a beef operation?
    a. Maximizing protein levels in creep feed
    b. Using an aggressive 3 breed rotational-cross breeding program
    c. Selecting replacement heifers and bulls that are very muscular and carcass oriented
    d. Selecting bulls that have a superior ADG, weaning and yearling performance

15. Which of the below EPDs for Weaning Weight would you expect to be the most reliable?
    a. 44 (Accuracy-0.88)  c. 38 (Accuracy-0.74)
    b. 34 (Accuracy-0.68)  d. 42 (Accuracy-0.94)

16. Cattle adjusted weaning weights are adjusted to______ days.
    a. 210  c. 230
    b. 205  d. 250

17. Overeating disease is called______.
    a. Enterotoxemia  c. Bloat
    b. Anthrax  d. Johne’s disease

18. Breeding an Angus bull to a Hereford cow will result in what color calf.
    a. Roan with a white face  c. Red with a white face
    b. Black baldy  d. 50% Black with white face and 50% Red with white face

19. A market price for a barrow of $68.00/CWT is the same as
    a. $0.68 per pound  c. $68.00 per pound
    b. $6.80 per pound  d. $680.00 per pound

20. The larger a bull’s scrotal circumference, the sooner his daughters reach sexual maturity.
    a. True
    b. False
21. What would the USDA Yield Grade be for a market lamb carcass with 0.13 inches of fat?
   a. 1.3          c. 1.9
   b. 1.7          d. 2.1

22. In swine, the breakdown of ingested feed begins in the
   a. Mouth       c. Small intestine
   b. Stomach     d. Large intestine

23. Which feedstuff below would you expect to have the lowest crude protein?
   a. Ground corn c. Soybean meal
   b. Cottonseed meal d. Corn gluten meal

24. Which of the below breeding examples will produce an F1 maternal line gilt?
   a. York/Landrace boar x Duroc gilt c. Yorkshire boar x Landrace sow
   b. Chester White boar x Berkshire gilt d. Hampshire boar x Yorkshire sow

25. The presence of a break joint on a sheep carcass signifies ________.
   a. Mutton carcass c. Spool carcass
   b. Condemned carcass d. Lamb carcass

26. What would the USDA Yield Grade be for a market lamb carcass with 0.17 inches of fat?
   a. 1.3     c. 1.9
   b. 1.7     d. 2.1

27. What two breeds make up the composite breed Durham Red?
   a. Red Angus and Red Poll c. Shorthorn and Red Angus
   b. Shorthorn and Gelbvieh d. Simmental and Shorthorn

28. Which of the below is a plant-based protein source used in swine diets?
   a. Soybean meal  c. Blood meal
   b. Whey         d. None of the above

29. White muscle disease in lambs is a deficiency of
   a. Iron        c. Copper
   b. Selenium    d. Zinc

30. Which will increase sexual activity in sheep?
   a. Less light   c. Higher temperatures
   b. Lower level of nutrition d. More light

31. To improve the reproductive and maternal performance of a cowherd, which of the following management practices would produce the fastest results?
   a. Implement a cross breeding program c. Select bulls that have a superior ADG
   b. Maximize protein and energy levels in creep feed d. Purchase bulls known for fertility

32. Which portion of a gilt’s digestive tract’s main functions are nutrient absorption?
   a. Duodenum  c. Jejunum
   b. Stomach   d. Large intestine

33. The fiber produced by an Angora goat is called
   a. Wool c. Mohair
   b. Hair d. Silk

34. CIDR’s are commonly used in estrous synchronization programs. They continually release what hormone?
   a. Estrogen c. Testosterone
   b. Prostaglandin d. Progesterone
35. Humans can contract soremouth from sheep. What is this disease known as in humans?
   a. Soremouth   c. Cold sores
   b. Orf   d. Hepatitis

36. The first milk produced by the dam after she gives birth, which is extremely important to the future health of the young is called
   a. Colostrum   c. Whole milk
   b. First milk   d. Milkstrum

37. Which below steak would be from the highest cutability beef carcass?
   a. 
   b. 

38. As a barrow gets older and heavier, its protein requirement increases.
   a. True
   b. False

39. Which ram below is the least susceptible to scrapie based on their Codon 171 Genotype?
   a. QQ   c. RR
   b. QR   d. Codon 171 is not related to scrapie

40. To maximize efficiency of a beef operation, the generation interval of the herd should be decreased. To do this, heifers should be bred for first time by _____ months of age and ______% of their mature weight.
   a. 12 months and 65%   c. 20 months and 85%
   b. 15 months and 65%   d. 24 months and 85%

41. Which of the following is an animal based protein used in nursery pig diets?
   a. Soybean meal   c. Alfalfa meal
   b. Blood meal   d. None of the above

42. Which beef EPD is the best indicator of the probability of injecting dystocia in the herd?
   a. Birth weight   c. Yearling weight
   b. Weaning weight   d. Carcass weight

43. Overeating disease is called _____.
   a. Enterotoxemia   c. Bloat
   b. Anthrax   d. Johne’s disease

44. Lining the intestinal wall is ___________ that increases the surface area of the intestine and as a result increases absorption.
   a. Papillae   c. Epithelial cells
   b. Duodenal cells   d. Villa

45. What mineral is known to kill sheep at levels commonly fed to beef cattle?
   a. Copper   c. Selenium
   b. Iron   d. Zinc

46. Volatile fatty acids are a main product of ruminal fermentation that are used for energy by the animal. Which of the following is one of main three volatile fatty acids?
   a. Acetate   c. Propionrate
   b. Butyrate   d. All of the above
47. Weaned, growing and finishing type hogs are fed special formulated diets for each specific growth period. These diets are known as ________ diets.
   a. Phase
   b. Least Cost
   c. Micro-nutrient
   d. Focused

48. The beef breed known for heat tolerance is
   a. Angus
   b. Simmental
   c. Brahman
   d. Chianina

49. For ruminants, urea is a good source of
   a. Protein
   b. Non-protein nitrogen
   c. Energy
   d. Minerals

50. Sheep are very gregarious, which indicates a strong
   a. Breeding behavior
   b. Flocking instinct
   c. Susceptibility to heat stress
   d. Anti-social behavior

LIVESTOCK BREEDING SCENARIO – TEAM

2018 Livestock Skillathon – Team Quality Assurance

Use the attached 4 product labels and treatment record to answer the below 25 questions.

PANACUR® POWDER 4%
Description: Broad-spectrum anthelminthic.
Composition: Active ingredient: 1 g powder contains 40 mg of fenbendazole.

Indications: Infections of pigs by immature and mature stages of worms found in the gastrointestinal and respiratory tracts and the kidneys, such as:
   Hyostrongylus rubidus (red stomach worm)
   Oesophagostomum spp. (nodular worms).
   Metastrongylus spp. (lungworm) (as an aid in control)
   Ascaris suum (eelworm).
   Stephanurus dentatus (kidney worm) (as an aid in control)
   Trichuris suis (whipworm).
   Panacur® has an ovicidal effect on nematode eggs.

Dosage: Dose: 5 mg fenbendazole (FBZ)/kg BW.
In Stephanurus dentatus infections: 10 mg FBZ/kg BW. Panacur® Powder 4% is either given to the animals with their usual feed, or used to mix a medicated feed (in piglet rearing feed, in straight feed for fattening pigs I and II, or in straight feed for breeding sows). The product can also be mixed into the breeder’s own mixed feed.

Administration of a single therapeutic dose: Herd treatment (one-day treatment): In each 500 g-bucket there is a measuring scoop which, filled level, holds approx. 25 g powder (approx. 1 g FBZ), corresponding to dose for 200 kg BW. One sachet contains 12.5 g (500 mg FBZ), which corresponds to dose for 100 kg BW.
Herd treatment: For medicated feed, therapeutic dose (5 mg FBZ per kg BW) is mixed into daily ration.

Procedure, for example:

<table>
<thead>
<tr>
<th>Type of pig</th>
<th>Feed consumption</th>
<th>Panacur Powder 4% per ton mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>feed weaners/fatteners: app. 20 kg BW</td>
<td>1 kg/day/animal</td>
<td>12.5 kg</td>
</tr>
<tr>
<td>Sows: app. 200 kg BW</td>
<td>2 kg/day/animal (basic ration)</td>
<td>12.5 kg</td>
</tr>
</tbody>
</table>

In Stephanurus dentatus infections the dose should be doubled (10 mg fenbendazole/kg bodyweight). In Trichuris suis and/or Metastrongylus spp. infections, treatment should be carried out as described in 2., below.
- Distribution of the therapeutic dose over 5-15 days (longterm treatment)
For medicated feed, the therapeutic dose (5 mg FBZ per kg BW) is mixed into the ration for 5-15 days.

Procedure, for example:

<table>
<thead>
<tr>
<th>Type of pig</th>
<th>Treatment period</th>
<th>Feed consumption</th>
<th>Panacur Powder 4% per ton mixed</th>
</tr>
</thead>
<tbody>
<tr>
<td>weaners/fatteners: app. 20 kg BW</td>
<td>5 days</td>
<td>1 kg/day/animal</td>
<td>0.5 kg</td>
</tr>
<tr>
<td></td>
<td>10 days</td>
<td></td>
<td>0.25 kg</td>
</tr>
<tr>
<td></td>
<td>15 days</td>
<td></td>
<td>0.17 kg</td>
</tr>
<tr>
<td>sows app.: 200 kg BW</td>
<td>5 days</td>
<td>2 kg/day/animal</td>
<td>2.5 kg</td>
</tr>
<tr>
<td></td>
<td>10 days</td>
<td>(basic ration)</td>
<td>1.25 kg</td>
</tr>
<tr>
<td></td>
<td>15 days</td>
<td></td>
<td>0.83 kg</td>
</tr>
</tbody>
</table>

Wheat bran is recommended for preparation of premixes (2 kg/t feed). In reinfected animals, treatment must be repeated.

Presentation: Pack with 10 sachets of 12.5 g each. Container: 500 g with measuring scoop. Bucket: 2.5 kg. Drum: 25 kg.

Side effects: None.

Contra-indications: None.

Further information: Panacur® Powder 4% is odourless and tasteless and is well accepted by animals.

General Reminder: Usage instructions and withdrawal periods may vary by country. Always follow label instructions and consult your veterinarian.

NUFLOR® TYPE A MEDICATED ARTICLE - Intervet/Merck Animal Health
(FLORFENICOL)
Type A Medicated Article for Swine
For Use in Swine Feeds Only
Do Not Feed Undiluted

Caution: Federal law limits this drug to use under the professional supervision of a licensed veterinarian. Animal feed bearing or containing this veterinary feed directive (VFD) drug shall be fed to animals only by or upon a lawful VFD issued by a licensed veterinarian in the course of the veterinarian’s professional practice.

Active Drug Ingredient: Florfenicol 40 g per kg (18.2 g per lb)

Inert ingredients: Limestone and Propylene glycol

Description: Each kg of Nuflor® Type A Medicated Article contains 40 grams of the antibiotic florfenicol in a palatable base.

Indications: For the control of swine respiratory disease (SRD) associated with Actinobacillus pleuropneumoniae, Pasteurella multocida, Streptococcus suis, and Bordetella bronchiseptica in groups of swine in buildings experiencing an outbreak of SRD.

Residue Warning: Feeds containing florfenicol must be withdrawn 13 days prior to slaughter.

Important: Must be thoroughly mixed in feeds before use.

Mixing Directions: Thoroughly mix 10 lb of Nuflor® Type A Medicated Article for Swine with 1990 lb of feed to provide Type C medicated feed containing 182 g florfenicol per ton, as shown below:
Feeding Directions: Feed medicated feed as the sole ration for 5 consecutive days to swine to deliver 10 mg florfenicol per kg body weight per day.

Caution: Feed containing florfenicol shall not be fed to pigs for more than 5 days. Following administration, pigs should be re-evaluated by a licensed veterinarian before reinitiating a further course of therapy. The expiration date for VFD for Nuflor® (florfenicol) must not exceed 90 days from the date of issuance. VFD for Nuflor® (florfenicol) shall not be refilled. The effects of florfenicol on swine reproductive performance, pregnancy, and lactation have not been determined.

Warning: Avoid inhalation, oral exposure, and direct contact with skin or eyes. Operators mixing and handling Nuflor® Type A Medicated Article for Swine should use protective clothing, gloves, goggles and a NIOSH-approved dust mask. Wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse thoroughly with water. If irritation persists, seek medical attention. Not for human consumption. Keep out of reach of children. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. For more information or to report adverse effects, call 1-800-211-3573. For customer service or a copy of the MSDS, call 1-800-521-5767.

Storage Conditions: Store at or below 25°C (77°F).

Cyclix® P

Description
Cyclix® P is a solution for injection containing cloprostenol, a potent synthetic analogue of prostaglandin F₂α.

Composition
Each ml of solution contains 0.263mg of cloprostenol sodium (corresponding to 0.250mg cloprostenol) and chlorocresol as preservative.

Formulation
Solution for injections.

Indications
Pigs
Induction or synchronization of farrowing from day 113 of pregnancy onwards (day 1 of pregnancy is the last day of natural or artificial insemination). This offers an opportunity for more efficient and convenient management under a variety of systems:
- Allows for batch management.
- Minimizes farrowing at weekends, public holidays and during the night hours.
- Facilitates supervision of farrowing and inter-fostering.

Dosage and method of administration
Sows - 1ml, corresponding to 0.25 mg cloprostenol/animal intramuscularly.

Withholding period
Not required for meat  
(National regulations should be observed)

**Presentation**  
Vials of 2ml, 20ml and 50ml.

**Storage**  
Do not store above 25°C. Protect from light. After first opening the product may be stored for 28 days.

**Contraindications**  
High standards of biosecurity must be observed when injecting groups of females in order to prevent induction of infection or spreading of infectious diseases between treated animals.  
*Pigs*  
Induction of farrowing before 113 days of pregnancy should not be attempted in order to avoid the birth of incompletely matured piglets.

**Precautions**  
Women of child bearing age, asthmatics and persons with bronchial or other respiratory problems should handle the product with care, as cloprostenol is readily absorbed through the skin and may cause abortion or bronchial spasm. In case of accidental self-injection, seek medical advice immediately and show the package insert or the label to the physician. Accidental spillage on skin should be washed immediately with soap and water.

**General Reminder**  
Usage instructions and withdrawal periods may vary by country. Always follow label instructions and consult your veterinarian.

**BANAMINE®-S INJECTABLE SOLUTION** - Intervet/Schering-Plough Animal Health  
*(FLUNIXIN MEGLUMINE)* 50 mg/mL

**Veterinary:** For intramuscular use in swine. Not for use in breeding swine.  
**Caution:** Federal law restricts this drug to use by or on the order of a licensed veterinarian.  
**Description:** Each milliliter of BANAMINE-S Injectable Solution contains flunixin meglumine equivalent to 50 mg flunixin, 0.1 mg edetate disodium, 2.5 mg sodium formaldehyde sulfoxylate, 4.0 mg diethanolamine, 207.2 mg propylene glycol; 5.0 mg phenol as preservative, hydrochloric acid, water for injection q.s.

**Pharmacology:** Flunixin meglumine is a potent, non-narcotic, non-steroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test. Flunixin is known to persist in inflammatory tissues and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations. Therefore, prediction of drug concentrations based upon estimated plasma terminal elimination half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

The pharmacokinetic profiles were found to follow a 2-compartmental model, although a deep (third) compartment was observed in some animals. The mean terminal elimination half-life (β half-life) of flunixin after a single intramuscular injection of Banamine (2.2 mg/kg) to pigs was between 3 and 4 hours. The mean observed maximum plasma concentration was 2944 ng/mL, achieved at a mean time of approximately 0.4 hours. The mean AUC(0-LOQ) was 6431 ng*hr/mL. Following IM administration of flunixin, quantifiable drug concentration could be measured up to 18 hours post dose. The mean volume of distribution was 203 mL/kg and the mean total clearance was 390 mL/hr/kg. The mean absolute bioavailability of flunixin following an intramuscular injection in the neck was 87%.

**Indication:** BANAMINE-S Injectable Solution is indicated for the control of pyrexia associated with swine respiratory disease.

**Dose & Administration:** The recommended dose for swine is 2.2 mg/kg (1 mg/lb; 2 mL per 100 lbs) body weight given by a single intramuscular administration. The injection should be given only in the neck musculature with a maximum of 10 mL per site. Note: Intramuscular injection may cause local tissue irritation and damage. In an injection-site irritation study, the tissue
damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

**Contraindications:** There are no known contraindications to this drug in swine when used as directed. Do not use in animals showing hypersensitivity to flunixin meglumine. Use judiciously when renal impairment or gastric ulceration is suspected.

**Residue Warnings:** Swine must not be slaughtered for human consumption within 12 days of the last treatment.

**Precautions:** As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully approached. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since many NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of flunixin meglumine with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided.

Not for use in breeding swine. The reproductive effects of BANAMINE-S Injectable Solution have not been investigated in this class of swine. Intramuscular injection may cause local tissue irritation and damage. In an injection site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter.

**Safety:** Flunixin was mildly irritating at the injection sites. No other flunixin-related changes (adverse reactions) were noted in swine administered a 1X (2.2 mg/kg; 1.0 mg/lb) dose for 9 days. Minimal toxicity manifested itself as statistically significant increased spleen weight at elevated doses (5X or higher daily for 9 days) with no change in normal microscopic architecture.

**How Supplied:** BANAMINE-S Injectable Solution, 50 mg/mL, is available in 100-mL, multi-dose vial.

Store between 2° and 30°C (36° and 86°F).

### Animal Treatment Record Sheet

**Date:** 9/29/18

<table>
<thead>
<tr>
<th>#</th>
<th>Species</th>
<th>Animal ID</th>
<th>Gender</th>
<th>Weight</th>
<th>Product</th>
<th>Route</th>
<th>Dosage</th>
<th>Withdrawal Time</th>
<th>Given By</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Swine</td>
<td>11-2</td>
<td>Sow</td>
<td>550 lbs</td>
<td>Cyclix</td>
<td>IM</td>
<td>1 mL</td>
<td>0 days</td>
<td>JP</td>
</tr>
<tr>
<td>2</td>
<td>Swine</td>
<td>3-8</td>
<td>Barrow</td>
<td>200 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>4 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>3</td>
<td>Swine</td>
<td>4-7</td>
<td>Gilt</td>
<td>350 lbs</td>
<td>Banamine</td>
<td>IM</td>
<td>7 mL</td>
<td>12 days</td>
<td>JP</td>
</tr>
<tr>
<td>4</td>
<td>Swine</td>
<td>14-3</td>
<td>Gilt</td>
<td>275 lbs</td>
<td>Nuflor</td>
<td>Feed</td>
<td>10 mg/kg BW</td>
<td>13 days</td>
<td>JP</td>
</tr>
<tr>
<td>5</td>
<td>Swine</td>
<td>12-1</td>
<td>Sow</td>
<td>450 lbs</td>
<td>Cyclix</td>
<td>IM</td>
<td>2 mL</td>
<td>0 days</td>
<td>JP</td>
</tr>
</tbody>
</table>

26. According to the treatment record, what is the withdrawal time for the anthelmintic?
   a. 0 days
   b. 12 days
   c. 13 days
   d. No anthelmintic was given

27. How many injection sites should be used if giving 12 ml of Banamine to a pig?
   a. 1
   b. 2
   c. 3
   d. 4

28. Which of the products is considered an antibiotic?
   a. Banamine
   b. Cyclix
   c. Nuflor
   d. Panacur
   e. None of the above

29. Of the products that are administered in the feed, which one requires supervision by a veterinarian?
   a. Banamine
   b. Cyclix
   c. Nuflor
   d. Panacur
   e. None of the above

30. Of the products that are administered via injection, which one is given subcutaneously?
   a. Banamine
   b. Cyclix
   c. Nuflor
   d. Panacur
   e. None of the above

31. What location on a barrow should the NSAID be administered?
a. Loin    c. Orally
b. Ham      d. Neck

32. Which of the products can cause the premature birth of pigs?
   a. Banamine    c. Nuflor    e. None of the above
   b. Cyclix

33. How much of the product containing cloprostenol should be given to a 3rd parity, 500-pound sow?
   a. 1 ml    c. 3 ml
   b. 2 ml    d. Not appropriate for a 3rd parity sow

34. Which of the products is considered an analgesic?
   a. Banamine    c. Nuflor    e. None of the above
   b. Cyclix

35. Which of the products can be used for herd management instead of treatment or prevention of disease?
   a. Banamine    c. Nuflor    e. None of the above
   b. Cyclix

36. What is the withdrawal time for the antibiotic product?
   a. 0 days    c. 13 days
   b. 12 days   d. 25 days

37. Which of the products is considered an anthelmintic?
   a. Banamine    c. Nuflor    e. None of the above
   b. Cyclix

38. When could this Banamine product be given to sheep?
   a. It is legal for sheep   c. Technical sales rep can give permission
   b. Only on order of veterinarian  d. Can never be given to sheep

39. How much flunixin meglumine should be given to a 250 pound barrow?
   a. 4 ml    c. 5 ml
   b. 4.5 ml   d. 5.5 ml

40. What is the active ingredient in the dewormer?
   a. Flunixin    c. Cloprostenol
   b. Florfenicol d. Fenbendazole

41. Of the products that are administered via injection, which can cause trim loss due to injection?
   a. Banamine    c. Nuflor    e. None of the above
   b. Cyclix

42. Which is the most appropriate size needle to use for Treatment #1?
   a. 12 gauge    c. 20 gauge    e. Should not use a needle
   b. 16 gauge    d. 22 gauge

43. When is the first day that the animal in treatment #2 be marketed?
   a. September 29   c. October 11
   b. October 3     d. October 15

44. What is the withdrawal time for the anti-inflammatory product?
   a. 0 days    c. 13 days
   b. 12 days   d. 25 days

45. Which of the treatments listed on the treatment record is an extra-label drug use?
   a. 1    c. 3    e. 5
   b. 2    d. 4
2017 Livestock Skillathon - Team Breeding Scenario – Keep/Cull Exercise – Hampshire Rams

Select the best 4 rams to be kept in an Indiana flock that concentrates heavily on providing rams to purebred and commercial producers, while enhancing their ewe numbers. Although growth performance is a concern, their primarily focus is improving the functionality and quality of the ewe base. Consequently, selection pressure has been established for rugged, easy keeping females. Resistance to scrapie within the flock is
managed solely through ram selection. All cull progeny are sold at the local auction market. Feed and labor is adequate.

<table>
<thead>
<tr>
<th>Ewe No.</th>
<th>B/R</th>
<th>Codon 171 Genotype</th>
<th>BW (kg)</th>
<th>WW (kg)</th>
<th>PWWT (kg)</th>
<th>CF (mm)</th>
<th>EMD (mm)</th>
<th>Carc+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>0.19</td>
<td>8.4</td>
<td>14.2</td>
<td>-0.9</td>
<td>2.2</td>
<td>190</td>
</tr>
<tr>
<td>2</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>0.15</td>
<td>8.2</td>
<td>14.0</td>
<td>-0.8</td>
<td>2.1</td>
<td>187</td>
</tr>
<tr>
<td>3</td>
<td>Tw/Tw</td>
<td>QR</td>
<td>0.12</td>
<td>7.8</td>
<td>13.2</td>
<td>-0.8</td>
<td>1.8</td>
<td>182</td>
</tr>
<tr>
<td>4</td>
<td>Tw/S</td>
<td>RR</td>
<td>0.13</td>
<td>7.6</td>
<td>11.6</td>
<td>-0.6</td>
<td>1.2</td>
<td>174</td>
</tr>
<tr>
<td>5</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>0.22</td>
<td>7.6</td>
<td>11.2</td>
<td>-0.6</td>
<td>1.4</td>
<td>173</td>
</tr>
<tr>
<td>6</td>
<td>Tw/S</td>
<td>QQ</td>
<td>0.25</td>
<td>8.2</td>
<td>14.0</td>
<td>-0.7</td>
<td>1.9</td>
<td>187</td>
</tr>
<tr>
<td>7</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>0.22</td>
<td>7.9</td>
<td>14.2</td>
<td>-0.9</td>
<td>2.3</td>
<td>192</td>
</tr>
<tr>
<td>8</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>0.23</td>
<td>8.1</td>
<td>13.9</td>
<td>-0.5</td>
<td>2.1</td>
<td>184</td>
</tr>
<tr>
<td>Avg</td>
<td></td>
<td></td>
<td>0.3</td>
<td>8.2</td>
<td>12.6</td>
<td>-1.4</td>
<td>1.4</td>
<td>181</td>
</tr>
</tbody>
</table>

**PWWT** – indicator of genetic differences in post-weaning weight at 120 days.

**CF** – indicator of genetic differences in carcass fat between the 12th and 13th ribs.

**EMD** – indicator of genetic differences in eye muscle depth between the 12th and 13th ribs adjusted to 110 lb of live weight.

**Carc+** – an index utilizing PWWT, CF and EMD.

**Questions**

1. Which ram would have the most severe impact on the scrapie status of the flock?
2. Of the twin reared rams, how many are below breed average for PWWT?
3. All rams should sire lambs that are fatter than average.
   a. True
   b. False
4. Which ram is likely to sire the least amount of muscle in his progeny?
5. How many rams are resistant to scrapie?

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**2016 Livestock Skillathon - Team Breeding Scenario – Keep/Cull Exercise – White-faced Ewes**

Select the 4 White-faced Ewes that are most appropriate to be kept in a Midwest commercial sheep operation. This relatively small flock focuses on the production of white-faced wethers and ewes to be marketed to 4-H and FFA members throughout the region. They will be bred exclusively to RR Southdown Rams. A small number of replacement ewes are retained annually. Feed and labor resources are adequate.
2017 Livestock Skillathon - Team Scenario – Judging Class - Market Steers

Rank these steers as they would be marketed on a commercial grid with a premium for CAB.

<table>
<thead>
<tr>
<th>Steer No.</th>
<th>Tag No.</th>
<th>Weight</th>
<th>Feedlot ADG</th>
<th>Ribeye Area</th>
<th>Back Fat</th>
<th>Marbling Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29159</td>
<td>1360</td>
<td>3.0</td>
<td>12.2</td>
<td>0.58</td>
<td>Small 70</td>
</tr>
<tr>
<td>2</td>
<td>56287</td>
<td>1350</td>
<td>3.5</td>
<td>14.0</td>
<td>0.47</td>
<td>Modest 30</td>
</tr>
<tr>
<td>3</td>
<td>64540</td>
<td>1340</td>
<td>3.1</td>
<td>13.2</td>
<td>0.42</td>
<td>Slight 80</td>
</tr>
<tr>
<td>4</td>
<td>92331</td>
<td>1380</td>
<td>3.7</td>
<td>15.8</td>
<td>0.40</td>
<td>Modest 50</td>
</tr>
</tbody>
</table>

2016 Livestock Skillathon - Team Scenario – Judging Class - Market Steers

Rank these steers as they would be used in an all-natural beef program designed for fat-conscious consumers that discourage excessive marbling.

<table>
<thead>
<tr>
<th>Steer No.</th>
<th>Tag No.</th>
<th>Weight</th>
<th>Feedlot ADG</th>
<th>Ribeye Area</th>
<th>Back Fat</th>
<th>Marbling Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25246</td>
<td>1280</td>
<td>3.2</td>
<td>13.3</td>
<td>0.3</td>
<td>Slight 80</td>
</tr>
<tr>
<td>2</td>
<td>39017</td>
<td>1320</td>
<td>3.1</td>
<td>13.0</td>
<td>0.65</td>
<td>Slightly Abundant 10</td>
</tr>
<tr>
<td>3</td>
<td>56257</td>
<td>1385</td>
<td>4.0</td>
<td>16.8</td>
<td>0.4</td>
<td>Slight 90</td>
</tr>
<tr>
<td>4</td>
<td>80808</td>
<td>1380</td>
<td>3.95</td>
<td>15.8</td>
<td>0.35</td>
<td>Small 40</td>
</tr>
</tbody>
</table>

**National 4-H Livestock Skill-A-Thon Resource Materials**

**National 4-H Contest Contact Information**
Superintendent - Matt Gunderson
Knights of AK-SAR-BEN
302 South 36th St., Suite 800
Omaha, NE68131
Phone: 402-554-9600, ext. 105
Fax: 402-554-9609
E-mail: gundersonm@aksarben.org

*Suggested Study Materials Include But Are Not Limited To The Following List.

**Swine Resources**

**OSU Swine Resource Handbook**
For market and breeding projects
4-H circular 134 R
The Ohio State University

**National Hog Farmer**
monthly periodical
7900 International Drive, Suite 300
Minneapolis, MN 55425
Seedstock Edge: www.nationalswine.com
National Swine Registry
West Lafayette, IN

Nasco Farm & Ranch Catalog
Fort Atkinson, WI
1-800-558-9595

Swine Learning Lab Interactive CD
The Ohio State University
Phone: 614-292-4848

Livestock E-Quiz: http://equiz.outreach.uiuc.edu

Illinois Trail - Technology and Research: Allied & Integrated Livestock Linkages
http://www.livestocktrail.uiuc.edu/

National Swine Registry: http://www.nationalswine.com

PORK magazine: http://www.Porkmag.com

Quality Assurance materials from National Pork Board
PQA Level I, II and III – change for 2008
Phone: 515-223-2600

University of Nebraska and Iowa State University
Nebraska State 4-H Office
Phone: 402-472-6413

Information on all swine breeds: http://www.ansi.okstate.edu

American Meat Institute: http://www.meatami.org

Beef Resources

OSU Beef Resource Handbook
4-H circular 117R
The Ohio State University
http://www.ag.ohio-state.edu/~buckpubs/

Illinois Beef Handbook

Beef Production and Management Decisions 2nd Edition by Robert Taylor

Feeds and Feeding by Morrison and Morrison

Forages, Fourth Edition by Maurice E. Heath, Robert F. Barnes and Darrel S. Metcalfe

Meat Evaluation Handbook by National Cattlemen’s Beef Association
Information on all beef breeds: http://www.ansi.okstate.edu

Sheep Resources

OSU Sheep Resource Handbook
4-H circular 194 R
The Ohio State University
PH. 614-292-1607

Goat Resources

American Boer Goat Association: http://www.abga.org/

Information on breeds: http://www.ansi.okstate.edu/breeds/goats/boer/

International Boer Goat Association
P. O. Box 663
Spicewood, TX 78669
Toll Free phone: 877-640-4242
Toll Free Fax: 877-640-4060

CCS Meat Goat Manuals – available from your County Extension Office

Forage Resources

Forages CD-ROM Companion
Volume 1 – An Introduction to Grassland Agriculture
Volume 2 – The Science of Grassland Agriculture
Iowa State University Press
Ames, IA 50014
Orders: 1-800-862-6657
Office: 1-515-292-3348

Forages-The Science of Grassland Agriculture, 4th Edition
by Maurice E. Heath, Robert F. Barnes, Darrel S. Metcalfe
Iowa State University Press
Ames, IA 50014
Orders: 1-800-862-6657

Pennsylvania Forage Handbook
Penn State College of Agricultural Sciences
217 Ag Administration Bldg.
University Park, PA 16802
Phone: 814-865-2541

Southern Forages
Circulation Department
Potash & Phosphate Institute
655 Engineering Drive, Suite 110
Norcross, Georgia 30092-2843
Meat Resources

Meat resources available at: http://aggiemeat.tamu.edu/judging.

Available from: Information Technology Communication Services

ITCS Instructional Materials
1401 South Maryland Drive
Urbana IL 61801 USA
(217) 244-3906
(800) 345-6087 (orders only)
FAX (217) 333-0005

Flash Cards
Retail Meat Cut Identification-Flash Card Set
This is the easiest way to teach or learn to recognize the common retail cuts of beef, pork, and lamb! These 5”x7” cards, with cut descriptions on the back, showcase 126 full-color photographs of the retail cuts of meat. Each image is printed on high-quality, glossy-finished card stock and comes in a custom-designed box.
X187b 150 cards $75.00

Slide Sets
Identification of Retail Meat Cuts
S180-1 Slide set, 110 fr. $61.50

Identification of Kinds of Meat
S181a Slide set, 33 fr. $19.15

Retail Beef Cut Identification-Labeled Set
Full-color photographs of the retail cuts of beef used in many state 4-H and FFA events. Each frame shows the retail name with an identifying frame number.
S183b Slide set, 74 fr., w/guide $43.70

Retail Beef Cut Identification
This film has no identifying numbers or labels and is suitable for review and testing purposes.
S183b(Supp) Slide set, 74 fr., w/guide $43.70

Retail Pork and Lamb Cut Identification-Labeled Set
Shows the retail cuts of pork and lamb. Each numbered and labeled frame is in full color.
S186 Slide set, 79 fr., w/guide $46.45

Retail Pork and Lamb Cut Identification
Suitable for testing and review purposes. Has no identifying numbers or labels.
S186(Supp) Slide set, 79 fr., w/guide $46.45

Quality and Yield Grading of Beef Carcasses
S260 Slide set, 80 fr., w/guide* $47.00

**Meat Evaluation Classes, Part I: Beef**
S270-1 Slide set, 100 fr., w/guide* $58.00
Meat Evaluation Classes, Part II: Pork & Lamb
S270-2 Slide set, 85 fr., w/guide* $49.75

**Photo CDS**

**Retail Beef Cut Identification**
The 67 photos contained on this Kodak Photo CD are of the retail cuts of beef. It is suitable to use for teaching or for review purposes.
View thumbnails of the first 10 images.
PCD109 $45.00

**Retail Pork and Lamb Cut Identification**
The 75 photos contained on this Kodak Photo CD are of the retail cuts of pork and lamb. This item can be used for teaching or for review.
View thumbnails of the first 10 images.
PCD110 $45.00

**Retail Beef Cut Identification-Labeled Set**
The 67 photos on this compact disc are of the retail cuts of beef. Each is labeled with the wholesale cut name and the retail cut name.
View thumbnails of the first 10 images.
PCD111L $45.00

**Retail Pork and Lamb Cut Identification-Labeled Set**
The 75 photos on this compact disc are of the retail cuts of pork and lamb. Each picture is labeled with the wholesale cut name as well as the retail cut name.
View thumbnails of the first 10 images.
PCD112L $45.00

**The Guide to Identifying Meat Cuts**
Booklet published cooperatively by American Meat Science Association, National Cattlemen’s Beef Association and National Pork Producers Council focused on meat labeling, meat safety, cuts of meats, nutrition labeling, wrapping meat, and meat cookery.
NPPC-04362…$2.00 each
National Pork Producers Council
Attn. Ordering Department
PO Box 10383, 1776 N.W. 114th Street
Des Moines, IA 50306
Phone: 800-456-7675
Fax: 515-223-2646

**Online Meats Identification and Placing Classes**
Texas A&M University Aggie Meat Judging Resources
http://aggiemeat.tamu.edu/judging/meatjudging.html

University of Nebraska–Lincoln Meats Judging Resources
http://animalscience.unl.edu/meats/aged/agedu.htm

University of Kentucky Agripedia Meats Judging Resources
http://www.ca.uky.edu/agripedia/agmania/meats/
2018 Livestock Skillathon

Class 1

Fleece Judging

Rank the four fleeces as they would be marketed by a northern Indiana commercial sheep producer who has recently found a niche market that pays a premium for locally produced raw wool.
2018 Livestock Skillathon

Class 2

Hay Judging

Rank these hays to be used in an Indiana herd with 30 lactating sheep. This operation makes it a goal to select hays that don't require an additional protein supplement.