Indiana 4-H/FFA
State Livestock Skill-A-Thon Contest
2015 Resource Packet

Thank you to our 2014 Sponsors:
Crossbred Classic

Saturday, September 19, 2015
ASREC Machine Shed
5675 W 600 N, West Lafayette, IN 47906
Registration: 8:00 AM in ASREC Classroom
Contest: 9:00 AM
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Indiana 4-H/FFA Livestock Skill-A-Thon Contest

Contest Date: September 19, 2015

Location:
Purdue ASREC Machine Shed

Contest Coordinator:
Aaron Fisher; aaronfisher@purdue.edu; 765-494-8435

Rules and Regulations

Team and Contestant Eligibility

1. All 4-H (grades 3-12) or FFA members (grades 7-12) in the state of Indiana are eligible. The contest will be divided into junior (grades 3-8) and senior (grades 9-12) divisions. There will be a separate contest for juniors and seniors. Contestants must participate in the division according to their grade. The top 4-H senior team will be invited to attend the National Skill-A-Thon Contest which will be held in November in Louisville, Kentucky. The top FFA team and the second place 4-H team will have the opportunity to participate in the Western National Roundup Livestock Quiz Bowl in Denver in January.

2. Teams may consist of three or four members. All members of a four person team will compete, but the member receiving the lowest overall score will automatically be declared the alternate. The alternate’s scores will not be included in any of the team totals, but will be considered in making all individual awards. Teams consisting of three members will not have an alternate and all members’ scores will count towards individual and team awards.

3. Registration forms are due to Purdue University, Department of Youth Development and Agriculture Education, by September 11, 2015. Please use the Official 4-H and FFA Career Development Registration form for entry which can be found at http://www.four-h.purdue.edu/cde/index.cfm. Registration fees are $12.00 per individual. Checks should be made payable to Purdue University. Entries received after September 11 will be charged $100.00 per team and $25.00 per individual. No refunds will be made after September 11, 2015. No walk-up registration allowed! MUST PREREGISTER!

4. Contestants must not have competed previously in any official post-secondary livestock quiz bowl or livestock quadrathlon contests.

5. This contest covers the understanding and practical application and the principles of Animal Sciences related to beef, sheep, swine, and meat goats.

6. Master lists have been provided for breeds, equipment, feedstuffs, and retail meat ID.

Contest Method of Conduct

1. Registration for the contest will begin at 8:00 AM with the contest starting at 9:00 AM.

2. Contestants will be allowed 8 minutes to complete each of the 9 competition classes. Teams will be allowed 45 minutes to complete all of the team activities (no rotations for team activities).
3. During the individual competition round, contestants will be divided into groups and will remain with that assigned group throughout the round of classes. Each contestant will be given a single scantron sheet in which to complete all of the stations. **It is the contestants’ responsibility to completely and adequately bubble their answers on the scantron sheet.** There will be an effort made to bubble any contestant numbers that are not read by the scantron machine, **but NO re-bubbling of answers.** While completing the individual competition classes, there will be no conferring between contestants or between a contestant and anyone else except as directed by contest officials. The team competition round will follow the individual competition round.

4. Team members will complete one answer sheet for each team class representing the combined effort of all team members. There will be one answer sheet per team station. Teams will be allowed 45 minutes to complete all of the team activities turn in their 3 answer sheets (no rotations during the team portion). During the team competition round of the contest, contestants will only be allowed to confer with their own team members during the time period.

5. **Contestants shall not wear any hats.**

6. Contestants should bring a blank steno pad, clipboard and blank paper. Contestants may also use a small pocket calculator (programmable calculators will not be permitted). The contestants may not bring books, notes, pamphlets, or other reference materials into the contest area. **Contestants found in contempt of this rule will be disqualified.**

7. **Contestants may not be in possession of cell phones or other PDA devices during the contest.**

8. Contestants are not to pick up or touch any item that is being identified or evaluated in the individual competition classes.

9. Awards will be presented at the conclusion of the contest.

**Awards**

**Junior Awards**
- Awards for the top three teams
- Award for the top individual

**Senior 4-H Awards**
- Awards for the top three teams
- Award for the top individual

**Senior FFA Awards**
- Awards for the top three teams
- Award for the top individual

**Top Junior, Senior 4-H and Senior FFA Individual Overall – Banner**
**Top Junior, Senior 4-H and Senior FFA Team Overall - Banner**
Contest Classes

Individual Classes

1. **Retail Meat Cut Identification**: (50 points) Identify species (1 pt), wholesale (1 pt), retail (2 pt) and cookery (1pt) of 10 meat cuts in multiple choice format, spread across two stops (5 retail cuts per stop).

2. **Meat Judging**: Rank two classes of four similar retail cuts of meat (100 points). Seniors must also answer five questions on one of the classes (25 points).

3. **Livestock Feed Identification**: (50 points) Identify proper name of 10 feeds (3 pt) and identify each corresponding nutrient classification (2 pt) in multiple choice format.

4. **Livestock Breed Identification**: (50 points) Identify from pictures, ten breeds (beef cattle, swine, and sheep); seniors must also match the most appropriate description (Breed: 3 pt, Description: 2 pt).

5. **Fleece and Hay Judging Class**: (100 points) Rank a class of four hay samples with forage analysis information. Rank a class of four samples of fleece. A scenario will be provided for both classes.

6. **Livestock Equipment Identification**: (50 points) Identify proper name of 10 pieces of equipment; seniors must also identify their usage type, i.e. breeding (Equipment: 3 pt; Description: 2 pt).

7. **Quality Assurance Exercise**: (75 points) Complete a 25-question quiz over how to read a medicine label, calculate withdrawal times, complete a treatment record, and make responsible management decisions regarding quality assurance.

8. **Quiz**: (75 points) Complete a 25-question quiz concerning the total livestock industry.

Total Possible Individual Points = Seniors: 575  Juniors: 550

Team Activities

1. **Keep/Cull Exercise** (Juniors: 50 points; Seniors: 75 points) Team members will evaluate a group of 8 breeding animals (beef, sheep, swine or goats) using performance data to make selection/culling decisions based on a given scenario. Seniors will also answer 5 five-point questions on the class.

2. **Judging Class** (50 points) Team members will rank a set of 4 breeding or market animals (beef, sheep, swine or goats). Either could have performance data and/or a scenario.

3. **Quality Assurance Exercise** (100 points) Complete a 25-question quiz over how to read an animal health product label, calculate dosage rates and withdrawal times, complete a treatment record, be familiar with administration routes and make responsible management decisions regarding quality assurance.

Total Possible Team Points = Seniors: 225  Juniors: 200

Total team scores will be determined by adding the three highest individual team members’ class totals with the total accumulated from the team competition classes.
### Skill-A-Thon Class List

#### Junior Division

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<td>Scantron</td>
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Example of Correctly Bubbled Scantron Sheet – Side 1

**Meat Skillathon**
Form #480-5

Incorrect Marks Correct Mark

**Team Name / Additional Info**
John Smith
Y-M County

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**Quality Assurance Quiz**

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**Questions**

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**Industry Quiz**

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## Breeds of Livestock Master List

### Beef

<table>
<thead>
<tr>
<th>Breed</th>
<th>Description</th>
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<tbody>
<tr>
<td>Angus</td>
<td>British breed with highest number of registrations in the US. Noted for mothering ability and carcass marbling</td>
</tr>
<tr>
<td>Brahman</td>
<td>Bos Indicus breed known for heat and insect tolerance.</td>
</tr>
<tr>
<td>Brangus</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>Charolais</td>
<td>High growth breed originally from France known for muscle and cutability.</td>
</tr>
<tr>
<td>Chianina</td>
<td>Developed in Italy. Known for size and growth, referred to as the tallest breed of cattle.</td>
</tr>
<tr>
<td>Gelbvieh</td>
<td>Developed in Germany, originally considered a dual purpose breed. Has good carcass cutability and relatively early puberty.</td>
</tr>
<tr>
<td>Hereford</td>
<td>Can be horned or polled. Hardy British breed which in recent years combined polled and horned associations.</td>
</tr>
<tr>
<td>Limousin</td>
<td>Developed in France with moderate growth rate and frame size and high carcass cutability.</td>
</tr>
<tr>
<td>Maine-Anjou</td>
<td>Developed in France by crossing the Durham and the Mancelle breeds. Has good muscling.</td>
</tr>
<tr>
<td>Red Angus</td>
<td>From Scotland. Considered maternal with good terminal-related performance.</td>
</tr>
<tr>
<td>Red Poll</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>Salers</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>Santa Gertrudis</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>Shorthorn</td>
<td>Originated in England, with three distinct color patterns, considered a maternal breed.</td>
</tr>
<tr>
<td>Simmental</td>
<td>Originally developed in Switzerland for meat, milk and draft. Now noted for high growth rate, milking ability, and carcass cutability.</td>
</tr>
<tr>
<td>Texas Longhorn</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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### Sheep

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<tr>
<td>Cheviot</td>
<td>Small sized meat breed noted for its hardiness from Scotland</td>
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<tr>
<td>Columbia</td>
<td>Large frame US breed, developed from Lincolns and Rambouillets</td>
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<tr>
<td>Corriedale</td>
<td>Large frame wool breed developed from crossing Lincoln or Leicester rams on Merino ewes</td>
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<tr>
<td>Dorper</td>
<td>Primarily a mutton sheep, this breed was developed in South Africa and is one of the most fertile of sheep breeds.</td>
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<tr>
<td>Dorset</td>
<td>English, white face, meat breed known for out of season breeding</td>
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<tr>
<td>Finnsheep</td>
<td>Lighter muscled breed from Finland noted for being prolific</td>
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<tr>
<td>Hampshire</td>
<td>Large framed, English, meat breed with black face and wool cap</td>
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<tr>
<td>Katahdin</td>
<td>A hair sheep breed developed in the United States.</td>
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<tr>
<td>Lincoln</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>
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<tr>
<td>Montadale</td>
<td>Breed developed from Columbia and Cheviot cross noted for high quality carcasses and excellent wool</td>
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<tr>
<td>Merino</td>
<td>Very fine fleece breed with heavy wool production from Spain</td>
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<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>
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<tr>
<td><strong>Rambouillet</strong></td>
<td>Wool breed developed in France and Germany from Merino breed</td>
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<tr>
<td><strong>Shropshire</strong></td>
<td>Breed originating in England known as one of the heaviest wool producers among the medium wool breeds</td>
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<tr>
<td><strong>Southdown</strong></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>
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<tr>
<td><strong>Suffolk</strong></td>
<td>Large framed, black faced breed known for high growth rate and carcass cutability from England</td>
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<tr>
<td><strong>Tunis</strong></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>
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**Swine**

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

**Goat**

| **Angora** | The most valuable characteristic of this breed as compared to other goats is the value of the mohair that is clipped |
| **Boer** | 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 |
| **Kiko** | 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. |
| **Pygmy** | Originally exported from Africa to zoos in Sweden and Germany where they were on display as exotic animals. |
| **Tennessee Woodenleg** | Myotonic, their muscles become extremely stiff when they are frightened. This hereditary condition makes the goat very muscular. |

Source: [http://www.ansi.okstate.edu/breeds](http://www.ansi.okstate.edu/breeds)
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<td>Facilities/animal restraint</td>
</tr>
<tr>
<td>Nose Lead</td>
<td>Facilities/animal restraint</td>
</tr>
<tr>
<td>Pig Obstetrical Forceps</td>
<td>Obstetrical/neonatal</td>
</tr>
<tr>
<td>Pig Resuscitator</td>
<td>Emergency or preventative health treatment</td>
</tr>
<tr>
<td>Pistol Grip Syringe</td>
<td>Vaccination/product administration</td>
</tr>
<tr>
<td>Prolapse Ring Retainer</td>
<td>Emergency or preventative health treatment</td>
</tr>
<tr>
<td>Ralgro Implant Gun</td>
<td>Vaccination/product administration</td>
</tr>
<tr>
<td>Ram Marking Harness</td>
<td>Breeding</td>
</tr>
<tr>
<td>Rumen Magnet</td>
<td>Emergency or preventative health treatment</td>
</tr>
<tr>
<td>Scalpel</td>
<td>Emergency or preventative health treatment</td>
</tr>
<tr>
<td>Scotch Comb</td>
<td>Fitting and showing</td>
</tr>
<tr>
<td>Shearer's Screwdriver</td>
<td>Fitting and showing</td>
</tr>
<tr>
<td>Sheep Shears</td>
<td>Fitting and showing</td>
</tr>
<tr>
<td>Swine Breeding Spirette</td>
<td>Breeding</td>
</tr>
<tr>
<td>Tattoo Pliers</td>
<td>Identification</td>
</tr>
<tr>
<td>Test Tube</td>
<td>Diagnostic (animal or environment)</td>
</tr>
<tr>
<td>Transfer Needle</td>
<td>Diagnostic (animal or environment)</td>
</tr>
<tr>
<td>Vacutainer</td>
<td>Diagnostic (animal or environment)</td>
</tr>
<tr>
<td>Wool Card</td>
<td>Fitting and showing</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
## Retail Meat ID Master List

<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>Arm Pot-Roast, Bnls</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Chuck</td>
<td>Blade Roast</td>
<td>Moist</td>
</tr>
<tr>
<td>Beef</td>
<td>Chuck</td>
<td>Shoulder Pot Roast (Bnls)</td>
<td>Dry/Moist</td>
</tr>
<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>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>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>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>Ham/Leg</td>
<td>Smoked Ham, Shank Portion</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>Loin Chops</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>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>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>Lamb</td>
<td>Breast</td>
<td>Ribs (Denver Style)</td>
<td>Dry/Moist</td>
</tr>
<tr>
<td>Lamb</td>
<td>Leg</td>
<td>American Style Roast</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Leg</td>
<td>Frenched Style Roast</td>
<td>Dry</td>
</tr>
<tr>
<td>Lamb</td>
<td>Leg</td>
<td>Leg Roast, Bnls</td>
<td>Dry</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>
</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><strong>1</strong></td>
<td>Fill in bubble for each question. Each meat cut consists of 4 questions.</td>
</tr>
<tr>
<td>1) Species</td>
<td>A. Beef</td>
</tr>
<tr>
<td>2) Wholesale</td>
<td>A. Round</td>
</tr>
<tr>
<td>3) Retail</td>
<td>A. Blade Boston</td>
</tr>
<tr>
<td>4) Cookery</td>
<td>A. Dry Heat</td>
</tr>
<tr>
<td>5) Species</td>
<td>A. Beef</td>
</tr>
<tr>
<td>6) Wholesale</td>
<td>A. Plate</td>
</tr>
<tr>
<td>7) Retail</td>
<td>A. Arm Picnic</td>
</tr>
<tr>
<td>8) Cookery</td>
<td>A. Dry Heat</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><strong>1</strong></td>
<td>Fill in bubble for each question. Each feed consists of 2 questions.</td>
</tr>
<tr>
<td>1) Feed Sample</td>
<td>A. White Salt</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>A. Soybean Meal</td>
</tr>
<tr>
<td>2) Nutrition</td>
<td>A. Energy</td>
</tr>
<tr>
<td>3) Feed Sample</td>
<td>A. Corn Gluten Meal</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>F. Dicalcium Phosphate</td>
</tr>
<tr>
<td>4) Nutrition</td>
<td>A. Energy</td>
</tr>
</tbody>
</table>
LI VESTOCK 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

2012 Livestock Skillathon - Senior Breed ID
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

| 1 | Breed | A. Yorkshire | B. Berkshire | C. Landrace | D. Chester White | E. Hampshire |
|---|---|---|---|---|---|
| 1) | Description | A. Originally from England noted for pork quality, tenderness and marbling. | B. Lean, heavy muscled, black breed with six white points and droopy ears from Ohio. | C. Has erect ears, known as the "mother breed". | D. Known as a maternal breed with high conception rates, developed in PA. | E. Noted for large litters and large droopy ears, generally refined in bone. |
| 2 | Breed | A. Tennessee Woodenleg | B. Katahdin | C. Kiko | D. Boer | E. Dorper |
| 3) | Description | A. The most valuable characteristic of this breed as compared to other goats is the value of the mohair that is clipped. | 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. | C. Originally exported from Africa to zoos in Sweden and Germany where they were on display as exotic animals. | D. Myotonic, their muscles become extremely stiff when they are frightened. This hereditary condition makes the goat very muscular. | E. A hair breed of sheep developed in the United States. |

Junior

2012 Livestock Skillathon - Junior Breeds Station
Fill in bubble for each question. Each piece of equipment is worth 5 points

| 1 | Breed | A. Yorkshire | B. Berkshire | C. Landrace | D. Chester White | E. Hampshire |
|---|---|---|---|---|---|
| 2 | Breed | A. Dorset | B. Katahdin | C. Kiko | D. Boer | E. Dorper |
| 3 | Breed | A. Yorkshire | B. Berkshire | C. Duroc | D. Chester White | E. Spot |

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.

2014 Livestock Skillathon – Fleece Judging
Rank the four wool samples as they would be marketed by a southern Indiana wool pool cooperative that pays a premium for high quality, locally produced wool.
2013 Livestock Skillathon - Fleece Judging
Rank the four fleeces as they would be used by Wool R Us, a company that has developed a premium line of wool clothing. Among their most popular products is a line of dyed wool sweaters that are in high demand throughout the world.

2014 Livestock Skillathon – Hay Judging
Rank these hays as they would be used in a winter feeding program for gestating cows in a Midwestern Simmental operation. The goal of this program is to maintain condition on the cows in a least cost manner.

<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>88.9</td>
<td>9.8</td>
<td>60.8</td>
<td>142</td>
</tr>
<tr>
<td>2</td>
<td>96.2</td>
<td>3.8</td>
<td>50.2</td>
<td>120</td>
</tr>
<tr>
<td>3</td>
<td>87.8</td>
<td>15.9</td>
<td>69.7</td>
<td>200</td>
</tr>
<tr>
<td>4</td>
<td>87.9</td>
<td>9.5</td>
<td>59.1</td>
<td>139</td>
</tr>
</tbody>
</table>

2013 Livestock Skillathon - Hay Judging
Rank these hays as they would be fed to steers in a winter back grounding operation whose goal is to get the steers to their target weight as quickly as possible. This operation relies on purchased forages and byproduct feedstuffs. Whenever possible, they prefer for forage to be the predominant feed ingredient.

<table>
<thead>
<tr>
<th>No.</th>
<th>% DM</th>
<th>% CP</th>
<th>% TDN</th>
<th>RFV</th>
<th>% Ca</th>
<th>% P</th>
<th>Cost ($/ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>91.1</td>
<td>7.5</td>
<td>52</td>
<td>65</td>
<td>.56</td>
<td>.20</td>
<td>135</td>
</tr>
<tr>
<td>2</td>
<td>88.5</td>
<td>15.4</td>
<td>65</td>
<td>92</td>
<td>.88</td>
<td>.25</td>
<td>152</td>
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<tr>
<td>3</td>
<td>88.6</td>
<td>10.1</td>
<td>58</td>
<td>76</td>
<td>.63</td>
<td>.21</td>
<td>141</td>
</tr>
<tr>
<td>4</td>
<td>89.9</td>
<td>9.8</td>
<td>59</td>
<td>71</td>
<td>.57</td>
<td>.19</td>
<td>138</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
QUALITY ASSURANCE

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>20 mL</th>
<th>50 Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>0061-0969-01</td>
<td>065410</td>
<td>P13728-16</td>
</tr>
<tr>
<td>0061-0969-02</td>
<td>065412</td>
<td>P13729-15</td>
</tr>
</tbody>
</table>

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

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

3. This product is designed to ______ disease.
   a. Treat
   b. Prevent

4. This product is administered to the animal by
   a. Adding to feed
   b. Injection
   c. Adding to drinking water
   d. All of the above are appropriate
5. The withdrawal period for this product is
   a. 0 days   c. 40 days
   b. 20 days   d. 60 days
6. They is a chance for injection site reactions associated with this product.
   a. True   b. False
7. Once allowed to freeze, this product should be discarded.
   a. True   b. False
8. There is a risk of injury/illness if this product is accidently injected into a human.
   a. True   b. False
9. The acceptable route of administration is
   a. SubQ   d. All are appropriate
   b. IV   c. Only A and C are appropriate
   c. IM
10. The dosage for a 550-pound weaned steer is
    a. 1 mL   c. 3 mL
    b. 2 mL   d. dosage depends on weight of the calf
11. When are boosters indicated for this product
    a. 3 weeks post initial injection   c. Semi-annually for breeding animals
    b. Annually   d. Never
12. 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
13. The proper injection site for this product is
    a. Neck   c. Ham
    b. Loin   d. All are appropriate
14. What disease does this product provide protection against?
    a. Pinkeye   c. Blackleg
    b. Bovine respiratory disease   d. Influenza
15. What is the smallest bottle of this product that is available?
    a. 10 doses   c. 50 doses
    b. 20 doses   d. 100 doses
16. 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
17. If anaphylactic shock occurs after injection of this product, treat with
    a. Testosterone   c. Estrogen
    b. Epinephrine   d. None of the above
18. Administering 4 cc of this product to a gestating cow
    a. Will provide double protection   c. Is an extra label use
    b. Means that no booster is needed   d. Will likely kill the cow
19. 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
20. Marketing a steer 1 month post injection with this product is likely to result in
    a. Higher price per pound   c. Higher weaning weight
    b. Drug residue in the meat   d. None of the above
21. This product should be stored in a refrigerator.
    a. True   b. False
22. Gentamicin is added to this product as a preservative.
    a. True   b. False
23. 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
24. Prior to opening the bottle, this product requires shaking to thoroughly mix the product before use.
    a. True   b. False
Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.

a. True   b. False

END-FLUENCE® 2

Description: End-FLUence® 2 is an inactivated adjuvanted vaccine containing type A Swine Influenza Viruses, subtypes H1N1 and H3N2, and is adjuvanted with the patented dual adjuvant system, Microsol Diluvac Forte®.

Indications for use: For use in healthy swine as an aid in the prevention of influenza caused by type A Swine Influenza Virus (subtypes H1N1, H1N2 and H3N2). This product has been demonstrated to reduce clinical signs, lung lesions and virus shedding following challenge. Following vaccination, Duration of Immunity (DOI) has been demonstrated to be at least 10 weeks for H3N2, at least 8 weeks for H1N2 and at least 11 weeks for H1N1.

Contraindications: None

Undesirable effects: (frequency and seriousness) If anaphylactic reaction occurs, treat with epinephrine. Slight transient reactions at the site of injection may occur.

Precautions: Shake well before use. Use sterile syringes and needles.

Use during pregnancy and lactation: Not applicable

Interaction: Interaction with other medicinal products and other forms of interaction is unknown.

Method of administration: The vaccine is a liquid and ready-to-use product. Shake well before use. The vaccine is administered by intramuscular injection. Vaccinate pigs at three weeks of age or older with a 2ml dose, followed by a booster with 2 ml dose three weeks later. Animals retained for breeding should be given a booster dose semi-annually. Pigs from SIV seropositive dams should be vaccinated after passive maternal antibody levels have declined to allow active immunization.

Overdose: (symptoms, emergency procedures, antidotes) If anaphylactic reaction occurs, treat with epinephrine. Slight transient reactions at the site of injection may occur.

Special warnings for each target species: None

Withdrawal period(s): Zero days

Special precautions to be taken by the person administering the medicinal product to animals: None

Major incompatibilities: No incompatibilities are known. It is not recommended to mix with other veterinary medicinal products.

Shelf life: 30 months.

Storage: Store at +2 to +8°C. Do not freeze.

Nature and contents of container: Sterile high density polyethylene plastic vials containing 50, 100 or 250 doses. Vials are sealed with rubber stoppers and aluminum seals.

Special precautions for the disposal of unused medicinal product or waste materials, if any: No special precautions are required. Dispose according to National requirements.

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

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

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

3. The withdrawal period for this product is
   a. 0 days   c. 7 days
   b. 3 days   d. 9 days

4. They is no chance for injection site reactions associated with this product.
   a. True   b. False

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

6. The dosage for a 3-week old pig is
   a. 1 mL   c. 3 mL
b. 2 mL  
d. dosage depends on weight of the pig
7. When are boosters indicated for this product  
a. 3 weeks post initial injection  
b. After farrowing  
c. Semi-annually for breeding animals  
d. Only A and C
8. If anaphylactic shock occurs after injection of this product, treat with  
a. Testosterone  
b. Epinephrine  
c. Estrogen  
d. None of the above
9. This product is only available by order of a veterinarian.  
a. True  
b. False
10. Since record keeping is an important part of PQA, how would the below animal be identified?  
   ![Pig Image]
   
   1. 19-2  
   2. 2-19  
   3. 21-2  
   4. 2-21
11. This product is a modified-live vaccine, which means it needs to be hydrated before use.  
a. True  
b. False
12. The proper injection site for this product is  
a. Neck  
b. Loin  
c. Ham  
d. None of the above
13. This product can be stored for up to 3 years without any problem.  
a. True  
b. False
14. Once allowed to freeze, this product should be discarded.  
a. True  
b. False
15. Which is the most appropriate size needle to use for an injection of this product to a 500-pound sow?  
a. 12 gauge  
b. 16 gauge  
c. 20 gauge  
d. 22 gauge
16. What swine disease does this product provide protection against?  
a. Coccidiosis  
b. PEDV  
c. PRRS  
d. Influenza
17. This disease also is a human health concern.  
a. True  
b. False
18. This product should not be used the same time as a dewormer.  
a. True  
b. False
19. This product is designed to ____________ disease.  
a. Treat  
b. Prevent
20. What is the smallest bottle of this product that is available?  
a. 50 doses  
b. 100 doses  
c. 200 doses  
d. 250 doses
21. Which is the most appropriate size needle to use for an injection of this product to a 3 week old pig?  
a. 12 gauge  
b. 16 gauge  
c. 20 gauge  
d. 22 gauge
22. Administering 4 cc of this product to a 3 week old pig  
a. Will provide double protection  
b. Is an extra label use
b. Means that no booster is needed
d. Will likely kill the pig

23. Which subtype does this product provide the longest immunity against?
   a. H1N1
c. H3N2
   b. H1N2
d. H2N1

24. The dosage for a 2\textsuperscript{nd} parity sow would be
   a. 1 mL
c. 3 mL
   b. 2 mL
d. 4 mL

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

2014 Livestock Skillathon – Quality Assurance Quiz – Senior Division – Individual
RESFLOR GOLD\textsuperscript{®} – Intervet/Merck Animal Health

PRODUCT INFORMATION – (Florfenicol and Flunixin Meglumine) Antimicrobial/Non-Steroidal Anti-Inflammatory Drug

For subcutaneous use in beef and non-lactating dairy cattle only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

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

DESCRIPTION: RESFLOR GOLD\textsuperscript{®} is an injectable solution of the synthetic antibiotic florfenicol and the non-steroidal anti-inflammatory drug (NSAID) flunixin. Each milliliter of sterile RESFLOR GOLD\textsuperscript{®} contains 300 mg florfenicol, 16.5 mg flunixin as flunixin meglumine, 300 mg 2-pyrrolidone, 35 mg malic acid, and triacetin qs.

INDICATIONS: RESFLOR GOLD\textsuperscript{®} is indicated for treatment of bovine respiratory disease (BRD) associated with \textit{Mannheimia haemolytica, Pasteurella multocida, Histophilus somni}, and \textit{Mycoplasma bovis}, and control of BRD-associated pyrexia in beef and non-lactating dairy cattle.

DOSEAGE AND ADMINISTRATION: RESFLOR GOLD\textsuperscript{®} should be administered once by subcutaneous injection at a dose rate of 40 mg florfenicol/kg body weight and 2.2 mg flunixin/kg body weight (6 mL/100 lb). Do not administer more than 10 mL at each site. The injection should be given only in the neck. Injection sites other than the neck have not been evaluated. For the 500mL vial, do not puncture the stopper more than 10 times.

<table>
<thead>
<tr>
<th>ANIMAL WEIGHT (lbs)</th>
<th>DOSAGE (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>6.0</td>
</tr>
<tr>
<td>200</td>
<td>12.0</td>
</tr>
<tr>
<td>300</td>
<td>18.0</td>
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<td>400</td>
<td>24.0</td>
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<td>500</td>
<td>30.0</td>
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<tr>
<td>600</td>
<td>36.0</td>
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<tr>
<td>700</td>
<td>42.0</td>
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<tr>
<td>800</td>
<td>48.0</td>
</tr>
<tr>
<td>900</td>
<td>54.0</td>
</tr>
<tr>
<td>1000</td>
<td>60.0</td>
</tr>
</tbody>
</table>

CONTRAINDICATIONS: Do not use in animals that have shown hypersensitivity to florfenicol or flunixin.

Recommended Injection Location

* Do not administer more than 10 mL at each site.
WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains material that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately.

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 diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. Concurrent administration of potentially nephrotoxic drugs should be carefully monitored. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such anti-prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that have not been previously diagnosed. Since many NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of RESFLOR GOLD® with other anti-inflammatory drugs, such as NSAIDs or corticosteroids, should be avoided or closely monitored. Flunixin is a cyclo-oxygenase inhibitory NSAID, and as with others in this class, adverse effects may occur with its use. The most frequently reported adverse effects have been gastrointestinal signs. Events involving suspected renal, hematologic, neurologic, dermatologic, and hepatic effects have also been reported for other drugs in this class. Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Toxicity studies in dogs, rats, and mice have associated the use of florfenicol with testicular degeneration and atrophy. NSAIDs are known to have potential effects on both parturition and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. The effects of flunixin on imminent parturition have not been evaluated in a controlled study. NSAIDs are known to have the potential to delay parturition through a tocolytic effect. RESFLOR GOLD®, when administered as directed, may induce a transient reaction at the site of injection and underlying tissues that may result in trim loss of edible tissue at slaughter.

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 38 days of treatment. Do not use in female dairy cattle 20 months of age or older, as use of florfenicol may cause milk residues. Withdrawal period is not established in pre-ruminating calves. Do not use in veal calves.

ADVERSE REACTIONS: Transient inappetence, diarrhea, decreased water consumption, and injection site swelling have been associated with the use of florfenicol in cattle. In addition, anaphylaxis and collapse have been reported post-approval with the use of another formulation of florfenicol in cattle. In cattle, rare instances of anaphylactic-like reactions, some of which have been fatal, have been reported, primarily following intravenous use of flunixin meglumine.

MICROBIOLOGY: Florfenicol is a synthetic, broad-spectrum antibiotic active against many Gram-negative and Gram-positive bacteria isolated from domestic animals. It acts by binding to the 50S ribosomal subunit and inhibiting bacterial protein synthesis. Florfenicol is generally considered a bacteriostatic drug, but exhibits bactericidal activity against certain bacterial species. In vitro studies demonstrate that florfenicol is active against the BRD pathogens M. haemolytica, P. multocida, and H. somni, and that florfenicol exhibits bactericidal activity against strains of M. haemolytica and H. somni.

STORAGE INFORMATION: Do not store above 30°C (86°F). Use within 28 days of first use.

HOW SUPPLIED: RESFLOR GOLD® is available in 100, 250, and 500 mL sterile, multiple-dose, glass vials.

1. RESFLOR is considered an
   a. Antibiotic
   b. Anthelmintic
   c. Anti-inflammatory
   d. None of the above
   e. Only A and C

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

3. This product is administered through
   a. Feed
   b. Injection
4. This product is designed to __________ disease.
   a. Treat  b. Prevent  
5. The meat withdrawal for a 750 steer treated with RESFLOR is
   a. 0 days  b. 18 days  c. 28 days  d. 38 days 
6. This product is available to customers as an over the counter drug.
   a. True  b. False  
7. What is the dosage for a 900 gestating beef cow?
   a. 48 mL  b. 54 mL  c. 60 mL  d. 66 mL 
8. How many injections sites should be used for a 400 pound pre-weaned beef heifer?
   a. 1  b. 2  c. 3  d. 4 
9. Which of the active compounds is an antibiotic?
   a. Flunixin Meglumine  b. Florfenicol  c. Cyclo-oxygenase  d. None of the above 
10. What is the dosage for an 800 lactating dairy cow?
    a. 48 mL  b. 54 mL  c. 60 mL  d. 66 mL 
11. RESFLOR should be administered
    a. SubQ  b. IM  c. IV  d. Orally 
12. How many injections sites should be used for a 200 pound veal calf?
    a. 1  b. 2  c. 3  d. 4 
13. When is it acceptable to increase the dosage of this product?
    a. Never  b. Veterinarian can approve  c. Sales rep can approve  d. The first use of product only 
14. RESFLOR is indicated for the treatment of bovine respiratory disease and para-influenza.
    a. True  b. False  
15. Proper record-keeping is important with the use of RESFLOR.
    a. True  b. False  
16. RESFLOR requires refrigerated storage.
    a. True  b. False  
17. Which of the active compounds is an anti-inflammatory?
    a. Flunixin Meglumine  b. Florfenicol  c. Bacteriostatic  d. None of the above 
18. Use of this product can have a negative effect on estrus synchronization strategies.
    a. True  b. False  
19. RESFLOR should only be given in the
    a. Loin  b. Neck  c. Rump  d. All of the above 
20. What is the dosage for a 550 pounded weaned steer?
    a. 24 mL  b. 30 mL  c. 33 mL  d. 36 mL 
21. Care should be taken with the use of RESFLOR as it can be harmful to humans.
    a. True  b. False  
22. By using RESFLOR, potential problems include
    a. Inappetence  b. Diarrhea  c. Injection site swellinge. Only A and C  d. All of the above 
23. Attention should be paid with a 500-mL vial so to not puncture stopper more than 10 times.
    a. True  b. False  
24. Marketing a steer 1 month post injection with this product is likely to result in a drug residue.
25. Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.

   a. True  
   b. False

**2013 Livestock Skillathon – Quality Assurance Quiz – Senior Division – Individual**

**Agway® Hi-Energy Lamb Medicated**

Hi-Energy Lamb medicated supplement is designed to be fed to growing and finishing lambs in confinement.

**FEATURES & BENEFITS**

- Agway® Hi-Energy Lamb Medicated is a 16% protein, complete feed that provides energy and protein to lambs raised for meat or for getting replacement lambs off to a great start.
- It is medicated with Bovatec® for the prevention of coccidiosis caused by Eimeria ovina, Eimeria crandallis, Eimeria ovinoidalis (Eimeria ninahyakimovae), Eimeria parva and Eimeria intricate in sheep maintained in confinement.
- This feed contains a calcium-to-phosphorus ratio of 2:1 and 0.5% ammonium chloride to promote a healthy urinary tract in young animals.
- HealthyTract™ Technology helps reduce the risk of urinary calculi.
- Bovatec® is a registered trademark of Alpharma LLC

**FEEDING DIRECTIONS**

- Each pound of this medicated feed contains 15 MG Lasalocid.
- Feed continuously at the rate of 1 lb to 4.66 lb per head per day to provide not less than 15 MG, no more than 70 MG Lasalocid per head per day depending on bodyweight.
- This feed is intended to be fed with forage.
- Provide plenty of fresh, clean water at all times.
- Hi Energy Lamb Medicated is a complete pellet with a high level of energy and regulated protein solubility to support production.
- In addition to being a complete ration for growing-fattening lambs, Hi Energy Lamb Pellets Medicated is also recommended as a creep feed for nursing lambs.

**CAUTION:** The safety of Lasalocid in unapproved species has not been established; do not allow horses or other equine access to Lasalocid as ingestion may be fatal; feeding undiluted, mixing errors or inadequate mixing (recirculation or agitation of liquid supplements) resulting in excessive concentrations of Lasalocid could be fatal to cattle and sheep.

**GUARANTEED ANALYSIS**

*This includes no more than 1.0% equivalent protein from non-protein nitrogen.

Crude Protein ................................................................. min 16%
Crude Fat ........................................................................ min 3.0%
Crude Fiber ...................................................................... max 12%
Calcium ........................................................................... min 0.6%...max 1.0%
Phosphorus ...................................................................... min 0.35%
Salt ............................................................................... min 1.0%...max 1.5%
Sodium ........................................................................... min 0.15%...max 0.5%
Selenium ......................................................................... min 0.3 PPM
Vitamin A ....................................................................... min 2000 IU/LB
Vitamin E ....................................................................... min 44 IU/LB

**Active Drug Ingredient:** Lasalocid........................................ 30 grams/ton

**Cydectin Oral Drench For Sheep - (moxidectin)** Contains 1 mg moxidectin/mL

For Treatment and Control of Infections Due to Internal Parasites of Sheep.

Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

**Product Description:** CYDECTIN Oral Drench for Sheep is a ready-to-use solution containing 0.1% moxidectin. Moxidectin is an endectocide in the milbemycin chemical class which shares the distinctive mode of action characteristic of macrocyclic lactones. Moxidectin acts by interfering with chloride channel-mediated neurotransmission in the parasite. This results in paralysis and elimination of the parasite.

**Cydectin Oral Drench for Sheep Indications:** CYDECTIN Oral Drench for Sheep, when administered at the recommended dose level of 0.2 mg moxidectin/2.2 lb (0.2 mg/kg) body weight, is effective in the treatment and control of adult and larval (L₄) stages of the following internal parasites of sheep:

Haemonchus contortus - Adult and L₄
Cooperia oncophora - Adult and L₄
**Administration:** CYDECTIN Oral Drench is ready-to-use. Administer 1 mL per 11 lb (1 mL per 5 kg) body weight into the mouth of the sheep, using any standard drenching equipment. Check dose rates and equipment before drenching. Do not overdose. Do not mix with any other products before administration. Avoid contaminating the drench solution.

**Dosage:** The recommended rate of administration for CYDECTIN Oral Drench for Sheep is 1 mL per 11 lb (5 kg) body weight to provide 0.2 mg moxidectin/2.2 lb (0.2 mg/kg) body weight. The table below will assist in the calculation of the appropriate volume of drench in 1.0 mL increments and it must be administered based on the weight of animal being treated.

<table>
<thead>
<tr>
<th>Body WT</th>
<th>Dose</th>
<th>Body WT</th>
<th>Dose</th>
<th>Body WT</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 lb</td>
<td>5 kg</td>
<td>1 mL</td>
<td>66 lb</td>
<td>30 kg</td>
<td>6 mL</td>
</tr>
<tr>
<td>22 lb</td>
<td>10 kg</td>
<td>2 mL</td>
<td>77 lb</td>
<td>35 kg</td>
<td>7 mL</td>
</tr>
<tr>
<td>33 lb</td>
<td>15 kg</td>
<td>3 mL</td>
<td>88 lb</td>
<td>40 kg</td>
<td>8 mL</td>
</tr>
<tr>
<td>44 lb</td>
<td>20 kg</td>
<td>4 mL</td>
<td>99 lb</td>
<td>45 kg</td>
<td>9 mL</td>
</tr>
<tr>
<td>55 lb</td>
<td>25 kg</td>
<td>5 mL</td>
<td>110 lb</td>
<td>50 kg</td>
<td>10 mL</td>
</tr>
</tbody>
</table>

**HUMAN WARNINGS:** Not for use in humans. Keep this and all drugs out of the reach of children. To obtain a copy of the material safety data sheet (MSDS) which provides more detailed occupational safety information or to report adverse reactions attributable to exposure to this product, call 1-866-638-2226.

**Residue Warnings:** Sheep must not be slaughtered for human consumption within 7 days of treatment. Because a withholding time in milk has not been established for this product, do not use in female sheep providing milk for human consumption.

**Environmental Warnings:** Studies indicate that when moxidectin comes in contact with the soil, it readily and tightly binds to the soil and becomes inactive. Free moxidectin may adversely affect fish and certain aquatic organisms. Do not contaminate water by direct application or by improper disposal of drug containers.

**Animal Safety Warnings:** CYDECTIN Oral Drench for Sheep has been formulated specifically for oral use in sheep and should not be given by any other route of administration. Do not use in sick, debilitated, or underweight animals. This product should not be used in other animal species as severe adverse reactions, including fatalities in dogs, may result.

**Animal Safety:** A well-controlled U.S. study has demonstrated an adequate margin of safety to allow treatment of sheep four months of age and older with Cydectin Oral Drench. In this study no signs of toxicity were seen in sheep given up to 5 times the recommended dose. Reproductive safety studies evaluating the use of Cydectin Oral Drench in breeding ewes and rams have not been conducted in the U.S.

**Storage:** Store product at or below 77°F (25°C). Protect from light.

**Disposal:** Do not contaminate water by direct application or by improper disposal of drug containers. Dispose of containers in an approved landfill or by incineration.

1. The second product listed (Cydectin) is considered an
   a. Antibiotic
   b. Analgesic
   c. Anthelmintic
   d. None of the above

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

3. The compound in the first product (Agway feed) that makes it “medicated” is
   a. Hi-Energy
   b. Lasolocid
   c. Selenium
   d. Cydectin

4. These two products can be used at the same time.
   a. True
   b. False

5. The max amount of calcium that can legally be in Agway feed is
   a. 0.15%
   b. 1.0%
6. The appropriate dose of Cydectin for a 77 pound wether is
   a. 6 mL  c. 8 mL
   b. 7 mL  d. Not appropriate for a wether

7. Cydectin should be administered
   a. SubQ  c. IV
   b. IM    d. Orally

8. The Agway feed being fed to what species could be fatal?
   a. Swine  d. Dairy cattle
   b. Horses d. Goats

9. Proper record-keeping is important with the use of Cydectin.
   a. True
   b. False

10. The Agway feed is intended to be the sole source of nutrition for growing-fattening lambs.
    a. True
    b. False

11. Cydectin is effective against adult and larval forms of
    a. Trichostrongylus axei  c. Nematodirus filicollis e. None of the above
    b. Cooperia oncophora  d. All of the above

12. Both of these products are only available by order of a veterinarian.
    a. True
    b. False

13. The meat withdrawal for lambs treated with Cydectin is
    a. 0 days  c. 14 days
    b. 7 days  d. Not appropriate for lambs intended for meat

14. The Agway feed contains a calcium-to-phosphorus ratio of 2:1, which helps
    a. Promote urinary tract health  c. Reduce parasitic load
    b. Prevent coccidiosis  d. None of the above

15. The appropriate dose of Cydectin for a 143 pound lactating ewe where the milk is used to make cheese is
    a. 11 mL  c. 13 mL
    b. 12 mL  d. Not appropriate for this ewe

16. Cydectin requires refrigerated storage and protection from light.
    a. True
    b. False

17. Cydectin may be used in sheep beginning at _______ months of age.
    a. 2      c. 6
    b. 4      d. 8

18. What disease does the “medicated” compound in the Agway feed help prevent?
    a. Urinary calculi  c. Parasitosis e. Only A and C
    b. Coccidiosis  d. All of the above

19. Due to this “medicated” status, the meat withdrawal for the feed is
    a. 0 days  c. 14 days
    b. 7 days  d. Not appropriate for lambs intended for meat

20. The trade name for the compound Lasolocid in the Agway feed is
    a. Agway  c. HealthyTract
    b. Bovatec  d. None of the above

21. The Agway feed must have at least ______ crude protein, or it is illegal.
    a. 12%  c. 16%
    b. 14%  d. No way it could be illegal regardless of crude protein level

22. Cydectin dosage must be very precise, as it does not have a very big margin of safety.
    a. True
    b. False

23. The appropriate dose of this particular Cydectin product for a 44 pound goat doe is
    a. 2 mL  c. 4 mL
2014 Livestock Skillathon – Team Quality Assurance

MATRIX® (altrenogest)

Net Contents: 1000 mL

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.
Manufactured by: DPT Laboratories, Inc., San Antonio, TX 78215
Distributed by: Intervet/Schering-Plough Animal Health, Millsboro, DE 19966.

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

2. What is the withdrawal time for the Merck product?
   a. 14 days   c. 28 days
   b. 21 days   d. None of the above

3. How is Matrix administered?
   a. Injection   c. IV
   b. In drinking water   d. Top dress feed

4. What type product is ProSystem TREC?
   a. Anthelmintic   c. Vaccine
   b. Antihistamine   d. Analgesic

5. It is acceptable to freeze the Merck product for proper long-term storage?
   a. True   b. False

6. How is ProSystem TREC administered?
   a. IM injection   c. Oral and IM injection   e. Only A and C
   b. SubQ injection   d. None of the above

7. The dosage for the estrus synchronization product is 2 ml.
   a. True   b. False

8. There is substantial risk for human illness/injury with the use of the Intervet product.
   a. True   b. False

9. For highly TGE-susceptible animals, you should always administer ProSystem TREC
   a. Orally   b. Injection

10. The Intervet product is used to
    a. Prevent disease   c. Manage the sow herd reproductively
    b. Treat disease   d. None of the above

11. The IM injection should always be given in the base of the ham.
    a. True   b. False

12. 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

13. What is the dosage of Matrix for an 800 beef heifer?
    a. 6.8 ml for 14 days   c. 3.4 ml for 14 days
    b. 6.8 ml for 7 days   d. Not appropriate for that animal

14. The vaccine should be used entirely when first opened, and any unused content should be destroyed.
    a. True   b. False

15. Matrix can be given to barrows to help them grow faster and appear with better conformation.
16. Which product can be stored at room temperature?
   a. Matrix       b. ProSystem TREC

17. Care should be taken when mixing the oral vaccine and avoid the use of hot water, which will
   a. Injure the animal  c. Injure the handler
   b. Kill the vaccine       d. None of the above

18. The Merck product is used to ____________ disease.
   a. Treat       b. Prevent

19. The active ingredient in Matrix is
   a. Rotavirus       c. Clostridium
   b. Enterotoxemia  d. Altrenogest

20. Proper record keeping is important for the use of both of these products.
   a. True       b. False

21. A gilt that is marketed 17 days after being orally vaccinated with the Merck product is likely to
   a. Be worth less money       c. All of the above
   b. Have a drug residue  d. None of the above

22. Cystic follicles are a possible reaction to underfeeding of the Merck product.
   a. True       b. False

23. ProSystem TREC is used to vaccinate a healthy pregnant sow to provide active immunity to its nursing pigs.
   a. True  b. False

24. If giving an IM injection of ProSystem TREC, what gauge needle should be used for a gilt?
   a. 14 gauge  c. 20 gauge
   b. 18 gauge  d. None of the above

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

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2013 Livestock Skillathon – Team Quality Assurance
Use the attached 4 product labels to answer the below 25 questions.

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).

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**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.

**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:

<table>
<thead>
<tr>
<th>Starting Concentration of Nuflor® Type A Medicated Article for Swine (Grams/pound)</th>
<th>Amount of Type A Medicated Article to add per ton (Pounds)</th>
<th>Resulting Concentration in Type C Medicated Feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.2</td>
<td>10</td>
<td>182</td>
</tr>
</tbody>
</table>

**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).

**PANACUR® POWDER 4%**

**Description:** Broad-spectrum anthelmintic.
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)
- Metastrongylus spp. (lungworm) (as an aid in control)
- Stephanurus dentatus (kidney worm) (as an aid in control)
- Oesophagostomum spp. (nodular worms).
- Ascaris suum (eelworm).
- Trichuris suis (whipworm).

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 (basic ration)</td>
<td>2.5 kg</td>
</tr>
<tr>
<td></td>
<td>10 days</td>
<td></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.

1. How much of the product containing florfenicol should be mixed into a ton of feed?
   - a. 5 pounds
   - b. 10 pounds
   - c. 50 pounds
   - d. 100 pounds

2. Which of the products requires refrigerated storage?
   - a. Banamine
   - b. Nuflor
   - c. None of the above
3. Which of the products is considered a hormone?
   a. Banamine 
   b. Cyclix 
   c. Nuflor 
   d. Panacur 
   e. None of the above

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

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

6. Of the products that are administered in the feed, which one requires supervision by a veterinarian?
   a. Banamine 
   b. Cyclix 
   c. Nuflor 
   d. Panacur 

7. Of the products that are administered via injection, which one is given subcutaneously?
   a. Banamine 
   b. Cyclix 
   c. Nuflor 
   d. Panacur 

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

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

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

11. How much of the product containing fenbendazole should be mixed in a ton of feed for a 200 kg sow for a 10-day treatment period?
    a. 0.25 kg 
    b. 0.83 kg 
    c. 1.25 kg 
    d. 2.5 kg 

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

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

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

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

16. For the products that are administered in the feed, how long should feed records be kept after the feed is used?
    a. 6 months 
    b. 12 months 
    c. 24 months 
    d. 36 months 

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

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

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

20. Improper use of products like Nuflor can result in
21. Which of the products is considered a vaccine?
   a. Banamine
   b. Cyclix
   c. Nuflor
   d. Panacur
   e. None of the above

22. Which is the most appropriate size needle to use for an injection of the product that is an analogue of prostaglandin to a 3rd parity, 500-pound sow?
   a. 12 gauge
   b. 16 gauge
   c. 20 gauge
   d. 22 gauge

23. Of the products that are administered in the feed, which one recommends that wheat bran be used for the preparation of premixes?
   a. Banamine
   b. Cyclix
   c. Nuflor
   d. Panacur
   e. None of the above

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

25. For the product that requires a VFD, what is the maximum number of days it can be used?
   a. 5 days
   b. 10 days
   c. 50 days
   d. 100 days

**QUIZ**

2014 Livestock Skillathon – Industry Quiz – Junior Division

1. Which of the following is generally considered the tallest breed of beef cattle?
   a. Charolais
   b. Brahman
   c. Chianina
   d. Simmental

2. Which is the term for black wool contained within a ewe’s fleece that cannot be dyed?
   a. Mutton
   b. Dark Fiber
   c. Kemp
   d. Tender Wool

3. Injections made under the skin are called
   a. SQ
   b. IV
   c. IM
   d. IN

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

5. The two breeds that make up the Santa Gertrudis breed are
   a. Angus and Hereford
   b. Brahman and Shorthorn
   c. Brahman and Hereford
   d. Brangus and Shorthorn

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

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

8. Which of the following would represent the highest cutability lamb carcass?
   a. Yield Grade 1, Quality Grade Choice
   b. Yield Grade 2, Quality Grade Choice
   c. Yield Grade 3, Quality Grade Prime
   d. Yield Grade 4, Quality Grade Prime

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

10. Parturition in swine is called
    a. Lambing
    b. Kidding
    c. Calving
    d. Farrowing

11. As it relates to pork quality, PSS stands for
12. Which of the following is a hair breed of sheep?
   a. Southdown
   b. Katahdin
   c. Montadale
   d. Lamancha

13. Having feed available at all times is known as __________ feeding.
   a. Complete
   b. Total
   c. Ad libidum
   d. None of the above

14. What is the term for a group of sheep together?
   a. Herd
   b. Pride
   c. Flock
   d. Gaggle

15. Sheep and beef cattle are known as ruminants and herbivores.
   a. True
   b. False

16. The Boer goat breed is considered a
   a. Dairy breed
   b. Meat breed
   c. Dual purpose breed
   d. Fiber breed

17. Which breed of sheep below is a larger framed sheep with jet black points and no wool on the wool cap or below the hock and knee?
   a. Hampshire
   b. Suffolk
   c. Shropshire
   d. Romney

18. What is the notch for the below pig?
   a. 7-11
   b. 9-7
   c. 7-9
   d. 11-7

19. In general, what is the recommended needle size for giving a beef animal an injection?
   a. 20 gauge
   b. 18 gauge
   c. 16 gauge
   d. 14 gauge

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

21. The period of time when a ewe has lamb(s) nursing is known
   a. Gestation
   b. Lactation
   c. Maintenance
   d. Hypocalcemia

22. Indiana is in the top 10 in hog production in the US.
   a. True
   b. False

23. The degree of marbling in a cut of pork will impact its
   a. Flavor
   b. Juiciness
   c. Tenderness
   d. All of the above

24. The two breeds that make up the Brangus breed are
   a. Angus and Hereford
   b. Brahman and Shorthorn
   c. Brahman and Angus
   d. Angus and Braford

25. Which of the following is used to describe when the lower jaw is too short?
   a. Parrot mouth
   b. Monkey mouth
   c. Short mouth
   d. Over mouth

2013 Livestock Skillathon – Industry Quiz – Junior Division

1. What is the gestation period for a cow?
   a. 114 days
   c. 278 days
2. Parturition in swine is called
   a. Lambing
   b. Kidding
   c. Calving
   d. Farrowing

3. As it relates to pork quality, PSS stands for
   a. Pork Stress Syndrome
   b. Porcine Stress Symptoms
   c. Porcine Stress Syndrome

4. Swine are considered monogastric and omnivorous animals.
   a. True
   b. False

5. Which beef breed below is known as the tallest breed?
   a. Charolais
   b. Angus
   c. Simmental
   d. Chianina

6. The main meat product that comes from culled sows is
   a. Ham
   b. Pepperoni
   c. Sausage
   d. Pork loin

7. Which of the following is a hair breed of sheep?
   a. Southdown
   b. Katahdin
   c. Montadale
   d. Lamancha

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

9. Generally speaking, the higher the external fat on a beef carcass, the higher the numerical yield grade.
   a. True
   b. False

10. ______ feeds are made available to nursing animals so they have access to high quality starter feeds.
    a. Phase
    b. Nursing
    c. Hidden
    d. Creep

11. Which of the below is a breed of swine known to be extremely lean and heavily muscled, but is also associated with pork quality problems?
    a. Duroc
    b. Pietrain
    c. Berkshire
    d. Hampshire

12. The Days to 250 EPD in swine is a measure of
    a. Feed efficiency
    b. Growth rate
    c. Muscle
    d. None of the above

13. Cattle breeds from England such as Angus, Hereford and Shorthorn are typically known as
    a. Traditional breeds
    b. British breeds
    c. Commercial breeds
    d. Maternal breeds

14. Sheep are considered monogastric and herbivorous animals.
    a. True
    b. False

15. Which of the following would represent the highest cutability lamb carcass?
    a. Yield Grade 1, Quality Grade Choice
    b. Yield Grade 2, Quality Grade Choice
    c. Yield Grade 3, Quality Grade Prime
    d. Yield Grade 4, Quality Grade Prime

16. The most terminal swine breed below is _________.
    a. Yorkshire
    b. Duroc
    c. Landrace
    d. Chester White

17. Which weight below is typically adjusted to 205-days of age in beef cattle?
    a. Birth weight
    b. Weaning weight
    c. Yearling weight
    d. None of the above

18. Having feed available at all times is known as __________ feeding.
    a. Complete
    b. Total
    c. Ad libidum
    d. None of the above
19. Which of the following is a small framed, low maintenance sheep breed that has primarily red points?
   a. Rambouillet  
   b. **Tunis**  
   c. Southdown  
   d. Dorset
20. ___________ is a common reference to the length of wool fibers.
   a. Crimp  
   b. Kemp  
   c. Clip  
   d. **Staple length**
21. The Beefmaster breed of cattle was developed by using Brahman and what other 2 breeds?
   a. Holstein and Shorthorn  
   b. Holstein and Red Angus  
   c. Hereford and Red Angus  
   d. **Hereford and Shorthorn**
22. A castrated male pig is known as a
   a. Steer  
   b. **Barrow**  
   c. Wether  
   d. Gelding
23. The typically dressing percentage for swine is
   a. 42%  
   b. 52%  
   c. 62%  
   d. **72%**
24. What is the preferred route and location when administering injections to beef cattle?
   a. IM and Neck  
   b. Sub-Q and Flank  
   c. IM and Rump  
   d. **Sub-Q and Neck**
25. Heifers should be bred at 14-15 months in order to calve at ____ months of age.
   a. 20  
   b. 24  
   c. 26  
   d. 28

2014 Livestock Skillathon – Industry Quiz – Senior Division

1. The predominant protein source in typical swine finishing diets is
   a. Soybean meal  
   b. Cottonseed meal  
   c. Corn  
   d. Corn gluten feed
2. What mineral is known to kill sheep at levels commonly fed to beef cattle?
   a. Copper  
   b. Iron  
   c. Selenium  
   d. Zinc
3. A dewormer is also known as an ____________.
   a. Antibiotic  
   b. Analgesic  
   c. Anthelmintic  
   d. None of the above
4. The beef breed known for heat tolerance is
   a. Angus  
   b. Simmental  
   c. Brahman  
   d. Chianina
5. The Polypay breed of sheep was developed from Dorset, Targhee and what other two breeds of sheep?
   a. Hampshire and Rambouillet  
   b. Rambouillet and Finnsheep  
   c. Hampshire and Finnsheep  
   d. Rambouillet and Southdown
6. For ruminants, urea is a good source of
   a. Protein  
   b. Non-protein nitrogen  
   c. Energy  
   d. Minerals
7. What two breeds make up the composite breed Balancer?
   a. Angus and Gelbvieh  
   b. Shorthorn and Angus  
   c. Red Angus and Brahman  
   d. Shorthorn and Gelbvieh
8. What would the USDA Yield Grade be for a market lamb carcass with 0.14 inches of fat?
   a. 1.4  
   b. 1.8  
   c. 2.0  
   d. 2.2
9. Which of the below forages would you expect to have the highest Crude Protein level?
   a. Orchardgrass  
   b. Tall fescue  
   c. Alfalfa  
   d. Timothy
10. The superiority of an outbred individual relative to the average performance of the parent populations included in the cross is known as ____________.
    a. Hybridosis  
    b. Cross vigor  
    c. Heterosis  
    d. None of the above
11. The presence of break joints on a sheep carcass signifies __________.
   a. Mutton carcass           c. Spool carcass
   b. Condemned carcass       d. Lamb carcass

12. Which below steak would be from the highest cutability beef carcass?
   - a. [Image]
   - b. [Image]

13. Myotonic is a term often used to describe what breed of goat?
   a. Boer             c. Angora
   b. Kiko            d. Tennessee Woodenleg

14. Gossypol is a toxic compound found in which of the below common livestock feedstuffs?
   a. Soybean Meal   c. Wheat Middlings
   b. Cottonseed Meal d. Distillers Grains

15. Which of the below is a white-faced sheep breed known for out of season breeding?
   a. Southdown       c. Montadale
   b. Dorset          d. Cheviot

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

17. Which portion of a gilt’s digestive tract’s main functions are water absorption and feces development?
   a. Duodenum       c. Jejunum
   b. Stomach        d. Large intestine

18. As a barrow gets older and heavier, its protein requirement decreases.
   a. True
   b. False

19. 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

20. Which of the below is an animal-based protein source used in swine nursery diets?
   a. Soybean Meal c. Cottonseed Meal
   b. Whey         d. None of the above

21. Which is a term for the natural waviness of the wool fibers?
   a. Crimp           c. Fleece
   b. Waves          d. Clip

22. The term for procedures to minimize disease transmission from outside a production unit is
   a. Quality Assurance c. Biosecurity
   b. Gestation        d. Vet Client Patient Relationship

Use the below table answer questions 23-25. Expected Progeny Differences for prospective herd sires

<table>
<thead>
<tr>
<th></th>
<th>BULL 1</th>
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<th>BULL 2</th>
<th></th>
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<td>Wean Wt</td>
<td>Milk</td>
<td>Year Wt</td>
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<td>0.99</td>
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<table>
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<th></th>
<th>BULL 4</th>
<th></th>
</tr>
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<td>Milk</td>
<td>Year Wt</td>
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<tr>
<td>Acc</td>
<td>Acc</td>
<td>Acc</td>
<td>Acc</td>
<td>Acc</td>
</tr>
<tr>
<td>3.6</td>
<td>0.99</td>
<td>3.6</td>
<td>0.99</td>
<td>3.6</td>
</tr>
</tbody>
</table>
23. Which bull do you suspect will sire calves that are heaviest at weaning, thus offering the greatest economic return on feeder calves he sires?
   b. Bull 2   d. Bull 4
24. Which bull should you have the least amount of confidence in all of his EPD?
   b. Bull 2   d. Bull 4
25. Which bull would you expect to sire the lightest calves as yearlings?
   b. Bull 2   d. Bull 4

2013 Livestock Skillathon – Industry Quiz – Senior Division
1. Which of the below compartments of a ruminants stomach functions as the fermentation vat?
   a. Rumen   c. Omasum
   b. Reticulum   d. Abomasum
2. What is the gestation period for a sow?
   a. 114 days   c. 278 days
   b. 150 days   d. 325 days
3. CIDR’s are commonly used in estrous synchronization programs. They continually release what hormone?
   a. Progesterone   c. Testosterone
   b. Prostaglandin   d. Estrogen
4. Which of the below is a white-faced sheep breed known for out of season breeding?
   a. Southdown   c. Montadale
   b. Dorset   d. Cheviot
5. Sheep are very gregarious, which indicates a strong
   a. Breeding behavior   c. Susceptibility to heat stress
   b. Flocking instinct   d. Anti-social behavior
6. Which sheep Quality Grade is generally considered one grade “worse” than Choice?
   a. Prime   c. Good
   b. Select   d. Utility
7. What mineral deficiency is associated with White Muscle Disease in lambs?
   a. Calcium   c. Phosphorus
   b. Selenium   d. Magnesium
8. What would the USDA Yield Grade be for a market lamb carcass with 0.18 inches of fat?
   a. 1.4   c. 2.0
   b. 1.8   d. 2.2
9. What are considered the building blocks of protein?
   a. Fatty acids   c. Essential acids
   b. Amino acids   d. None of the above
10. Which will increase sexual activity in sheep?
    a. Less light   c. Higher temperatures
    b. Lower level of nutrition   d. More light
11. 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
12. In swine, the breakdown of ingested feed begins in the
    a. Mouth   c. Small intestine
    b. Stomach   d. Large intestine
13. A breeding soundness exam for a bull generally includes examination of
    a. Feet and leg structure   c. Eyes
    b. Scrotal circumference   d. All of the above
14. The larger a bull’s scrotal circumference, the sooner his daughters reach sexual maturity.
    a. True
b. False

15. The reliability of an Expected Progeny Difference in beef cattle is measured by its
   a. Precision       c. Correctness
   b. **Accuracy**     d. Dependability

16. Which of the below gasses is a byproduct of rumen fermentation?
   a. Methane       c. Carbon Monoxide
   b. Butane        d. Ozone

17. A market price for a barrow of $74.00/CWT is the same as
   a. **$0.74 per pound**
   b. $7.40 per pound
c. $74.00 per pound
   d. $740.00 per pound

18. The superiority of an outbred individual relative to the average performance of the parent populations included in the
   cross is known as ____________.
   a. Hybridosis
   b. Cross vigor
c. **Heterosis**
d. None of the above

19. What is the name for an organism that lives part of its life in/on or at the expense of another animal?
   a. **Parasite**
   b. Bacteria
c. Virus
   d. Fungus

20. Period of time when a female is not having estrous cycles is known as ____________.
   a. Anestrus
   b. Polyestrus
c. **Monestrus**
d. Estrous cycle

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

22. Carcass traits are said to be _______________ heritable.
   a. Not
   b. Lowly
   c. **Intermediately**
d. Highly

23. Grass tetany is a condition in cattle associated with a deficiency of ____________.
   a. Calcium
   b. Selenium
   c. **Phosphorus**
d. Magnesium

24. What is the term for an inflammation of the udder, usually caused by bacteria?
   a. Metritis
   b. Cellulitis
   c. **Mastitis**
d. Mammaritis

25. The name given to products that provide pain relief is ____________.
   a. Antibiotic
   b. **Analgesic**
c. Anthelmintic
d. None of the above

**LIVESTOCK BREEDING SCENARIO - TEAM**

2014 Livestock Skillathon - Team Breeding Scenario – Keep/Cull Exercise - Dorset Ewes
Select the 4 Dorset ewes most appropriate to be kept in this central Indiana purebred Dorset operation. This operation
enjoys a well-earned reputation for high quality, muscular, nicely balanced lambs. This operation only uses RR rams. The
top 15% of ewes and rams are retained in the flock or sold private treaty. Approximately 30% of the remaining ewes and
wethers are exclusively marketed through several national online auctions. All other offspring are typically
purchased by area small, commercial sheep operations. All of these ewes are adequate in their breed character.
Feed resources are abundant with a strong forage base and labor is adequate for the size of this operation.

<table>
<thead>
<tr>
<th>Ewe No.</th>
<th>Tag No.</th>
<th>B/R</th>
<th>Codon 171 Genotype</th>
<th>Adj. 60-Day WT</th>
<th>Adj. 120-Day WT</th>
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<tbody>
<tr>
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<td>1369</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>58</td>
<td>107</td>
</tr>
<tr>
<td>2</td>
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<td>QR</td>
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<td>95</td>
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<td>13406</td>
<td>Tw/Tw</td>
<td>QR</td>
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<td>97</td>
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<td>Tw/S</td>
<td>QR</td>
<td>46</td>
<td>89</td>
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<td>5</td>
<td>13413</td>
<td>Tw/Tw</td>
<td>QR</td>
<td>48</td>
<td>99</td>
</tr>
<tr>
<td>6</td>
<td>13414</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>56</td>
<td>106</td>
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<td>7</td>
<td>13416</td>
<td>Tw/Tw</td>
<td>QR</td>
<td>52</td>
<td>102</td>
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</table>
2014 Livestock Skillathon - Team Scenario – Judging Class - Market Steers

Rank these steers as they would qualify for Certified Angus Beef and would be supplied to a white-table cloth restaurant.

**Ultrasound Data**

<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>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>1420</td>
<td>3.6</td>
<td>16.8</td>
<td>0.42</td>
<td>Modest 30</td>
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<td>2</td>
<td>13</td>
<td>1370</td>
<td>2.8</td>
<td>14.2</td>
<td>0.35</td>
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<tr>
<td>3</td>
<td>15</td>
<td>1380</td>
<td>3.3</td>
<td>12.8</td>
<td>0.8</td>
<td>Modest 60</td>
</tr>
<tr>
<td>4</td>
<td>17</td>
<td>1400</td>
<td>3.4</td>
<td>15.2</td>
<td>0.5</td>
<td>Small 40</td>
</tr>
</tbody>
</table>

2013 Team Breeding Scenario – Keep/Cull Exercise – Commercial Ewes

Select the 4 commercial ewes most appropriate to be kept in a commercial sheep operation where they will be mated to high quality Southdown rams. For the past several years, this operation has placed a premium on muscle and balance and has only used RR rams. Typically, the top 25% of the ewe and wether offspring are marketed through an annual on-farm production sale in which they partner with 2 other local sheep operations that are very similar in flock genetics (they routinely share rams) and production goals. A select number of rams and ewes are retained to be used in the flock. The next 10% of ewes are offered through private treaty to local sheep producers. All other offspring are sold through a regional sheep and goat sale. As this is a secondary operation for this family (owner is a local attorney), they rely heavily on purchased feed (hay and byproduct feeds). They routinely employ a couple local high school students, so labor is adequate.

<table>
<thead>
<tr>
<th>Ewe No.</th>
<th>Tag No.</th>
<th>B/R</th>
<th>Codon 171 Genotype</th>
<th>Adj. 60-Day WT</th>
<th>Adj. 120-Day WT</th>
</tr>
</thead>
<tbody>
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<td>RR</td>
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<td>105</td>
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<td>Tw/S</td>
<td>QR</td>
<td>57</td>
<td>112</td>
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<tr>
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<td>13165</td>
<td>Tw/Tw</td>
<td>QR</td>
<td>54</td>
<td>110</td>
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<tr>
<td>4</td>
<td>13166</td>
<td>Tw/Tw</td>
<td>RR</td>
<td>46</td>
<td>98</td>
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<tr>
<td>5</td>
<td>13170</td>
<td>S/S</td>
<td>RR</td>
<td>56</td>
<td>112</td>
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<tr>
<td>6</td>
<td>13176</td>
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<td>QR</td>
<td>53</td>
<td>109</td>
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<td>Tr/Tw</td>
<td>QR</td>
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<td>91</td>
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<td>8</td>
<td>13190</td>
<td>Tw/Tw</td>
<td>QR</td>
<td>51</td>
<td>106</td>
</tr>
</tbody>
</table>

2013 Livestock Skillathon – Team Scenario – Judging Class – Market Steers

Rank these steers as they would fit the criteria for the Big Eaters Beef Restaurant who pays premiums for finished cattle based on a yield and quality grid.

**Ultrasound Data**

<table>
<thead>
<tr>
<th>Steer No.</th>
<th>Tag No.</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>17</td>
<td>3.0</td>
<td>16.4</td>
<td>0.30</td>
<td>Slight 70</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>3.7</td>
<td>17.4</td>
<td>0.45</td>
<td>Modest 25</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
<td>3.2</td>
<td>16.2</td>
<td>0.40</td>
<td>Slightly Abundant 30</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>3.5</td>
<td>18.8</td>
<td>0.50</td>
<td>Moderately Abundant 20</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
Daniel J. Jennings, University of Illinois Extension

**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](http://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](http://equiz.outreach.uiuc.edu)

**Illinois Trail - Technology and Research: Allied & Integrated Livestock Linkages**
[http://www.livestocktrail.uiuc.edu/](http://www.livestocktrail.uiuc.edu/)

**National Swine Registry**: [http://www.nationalswine.com](http://www.nationalswine.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](http://www.ansi.okstate.edu)

**American Meat Institute**: [http://www.meatami.org](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
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
Phone: 770-447-0335
Price: $25.00

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
$180-1 Slide set, 110 fr. $61.50

Identification of Kinds of Meat
$181a 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/