

Indiana 4-H/FFA

State Livestock Skillathon Contest

2023

Area Contests

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

Below are the topics for the area contest. Each topic will be multiple choice and on a single sheet scantron and will be done individually.

Total points for Individuals: 260 for juniors 290 seniors. Total points possible for Teams Junior team = 780 and for senior team= 870).

- Breeds – 10 breeds @ 5 points each for Junior and Breed: 3 pt, Description: 2 pt for Senior
- Equipment – 10 pieces of equipment @ 5 points each
- Feeds – 10 feeds @ 5 points each for Junior and Feed: 3 pt, Classification: 2 pt for Senior
- Meat – Junior- 10 retail cuts @ 4 pts each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt)
- Meat – Senior -10 retail cuts @ 5 points each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt; Cookery- Only for Senior: 1 pt)
- Industry Quiz- Junior and Senior 25 questions at 2 points each
- Quality Assurance – Seniors- 20 questions @ 2 points each (40 points total) and Juniors- 10 questions @ 2 points each (20 points total)

State Contest

Saturday, October 7th, 2023

Purdue University – Animal Science Research and Education Center (ASREC)

5530 ASREC Lane West Lafayette, IN 47906

Registration: 8:30 AM in ASREC Classroom **Contest:** 9:30 AM **Cost:** \$15 per constant, lunch will not be provided

Contest Classes-

Individual Stations- (480 for Juniors and 510 senior total possible points

1. Equipment ID – 10 items @ 5 points each
2. Breed ID – 10 breeds @ 5 points each for Junior and Breed: 3 pt, Description: 2 pt for Senior
3. Retail Meat ID – Meat – Junior= 10 retail cuts @ 4 pts each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt) Meat – Senior =10 retail cuts @ 5 points each (Species: 1 pt; Primal: 1 pt; Retail: 2 pt; Cookery: 1 pt)
4. Hay (with data) and Wool Judging – 50 points for each class
5. Quality Assurance – Seniors 20 questions at 2 pts (40 points) and 10 questions for juniors at 2 pts (20 points)
6. Industry Quiz – 25 questions (50 points)
7. Feeds – 10 feeds @ 5 points each for Junior and Feed: 3 pt, Classification: 2 pt for Senior
8. Meat Judging -2 species (pork, beef etc.) – placing with 5 questions per class (placings 50, each questions 2 points for a total of 50)- (10 points for questions and 50 points for the class - 60 points total)

Team Stations (140 for juniors and 160 for seniors' total possible points) -

1. Quality Assurance (50 points seniors and 30 points juniors) a. Seniors- 25 questions at 2 pts each (50 points total) Juniors 15 questions at 2 pts each (30 points total), could include real stuff (medicine bottle, needle for ID, etc. and could include live animals). Live animal would only include animal movement and using live animal as a reference.
2. Animal Breeding (50 points for keep/cull and 5 questions at 2 points for 10 points for a total of 60 points)
3. Performance and Marketing (50 points for placing) a. Placing class with performance data (not EPDs but actual data) likely with a scenario

** With the Performance and Marketing Station, the youth are allowed to use a calculator. Youth should bring their own calculator. **NO** programmable calculators or cellphones used as calculator will be allowed! **

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

Example of Scantron Sheet – Side 1

Meat Skillathon Form #480-5b

Incorrect Marks Correct Mark

Team Name / Additional Info

Team #	State	Last Name	First Name
0			
1	A	A	A
2	B	B	B
3	C	C	C
4	D	D	D
5	E	E	E
6	F	F	F
7	G	G	G
8	H	H	H
9	I	I	I
	J	J	J
	K	K	K
	L	L	L
	M	M	M
	N	N	N
	O	O	O
	P	P	P
	Q	Q	Q
	R	R	R
	S	S	S
	T	T	T
	U	U	U
	V	V	V
	W	W	W
	X	X	X
	Y	Y	Y
	Z	Z	Z

Placing Classes							
Mark one answer in each column!							
	1	2	3	4	5	6	
1	1234	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1234
2	1243	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1243
3	1324	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1324
4	1342	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1342
5	1423	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1423
6	1432	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1432
7	2134	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2134
8	2143	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2143
9	2314	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2314
10	2341	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2341
11	2413	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2413
12	2431	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2431
13	3124	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3124
14	3142	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3142
15	3214	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3214
16	3241	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3241
17	3412	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3412
18	3421	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	3421
19	4123	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4123
20	4132	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4132
21	4213	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4213
22	4231	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4231
23	4312	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4312
24	4321	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4321
		1	2	3	4	5	6

Code

0
1
2
3
4
5
6
7
8
9

Team Quality Assurance		
1	A B C D E	11 A B C D E
2	A B C D E	12 A B C D E
3	A B C D E	13 A B C D E
4	A B C D E	14 A B C D E
5	A B C D E	15 A B C D E
6	A B C D E	16 A B C D E
7	A B C D E	17 A B C D E
8	A B C D E	18 A B C D E
9	A B C D E	19 A B C D E
10	A B C D E	20 A B C D E
		21 A B C D E
		22 A B C D E
		23 A B C D E
		24 A B C D E
		25 A B C D E
		26 A B C D E
		27 A B C D E
		28 A B C D E
		29 A B C D E
		30 A B C D E

Individual Quality Assurance Quiz		
1	A B C D E	11 A B C D E
2	A B C D E	12 A B C D E
3	A B C D E	13 A B C D E
4	A B C D E	14 A B C D E
5	A B C D E	15 A B C D E
6	A B C D E	16 A B C D E
7	A B C D E	17 A B C D E
8	A B C D E	18 A B C D E
9	A B C D E	19 A B C D E
10	A B C D E	20 A B C D E
		21 A B C D E
		22 A B C D E
		23 A B C D E
		24 A B C D E
		25 A B C D E
		26 A B C D E
		27 A B C D E
		28 A B C D E
		29 A B C D E
		30 A B C D E

Questions	
1	1 2 3 4
2	1 2 3 4
3	1 2 3 4
4	1 2 3 4
5	1 2 3 4
6	1 2 3 4
7	1 2 3 4
8	1 2 3 4
9	1 2 3 4
10	1 2 3 4

Team Keep/Cull	Team Questions
1	A B C D E
2	A B C D E
3	A B C D E
4	A B C D E
5	A B C D E
6	A B C D E
7	A B C D E
8	A B C D E
9	A B C D E
10	A B C D E

Industry Quiz		
1	A B C D E	11 A B C D E
2	A B C D E	12 A B C D E
3	A B C D E	13 A B C D E
4	A B C D E	14 A B C D E
5	A B C D E	15 A B C D E
6	A B C D E	16 A B C D E
7	A B C D E	17 A B C D E
8	A B C D E	18 A B C D E
9	A B C D E	19 A B C D E
10	A B C D E	20 A B C D E
		21 A B C D E
		22 A B C D E
		23 A B C D E
		24 A B C D E
		25 A B C D E
		26 A B C D E
		27 A B C D E
		28 A B C D E
		29 A B C D E
		30 A B C D E

Example of Scantron Sheet – Side 2

Meat Identification				
ID #	Species	Primal	Retail	Cookery
1	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
2	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
3	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
4	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
5	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
6	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
7	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
8	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
9	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M
10	B P L	A B C D E F G H I J	A B C D E F G H I J	D (M) D/M

Breed Identification	
Breed	Description
1 A B C D E	1 A B C D E
2 A B C D E	2 A B C D E
3 A B C D E	3 A B C D E
4 A B C D E	4 A B C D E
5 A B C D E	5 A B C D E
6 A B C D E	6 A B C D E
7 A B C D E	7 A B C D E
8 A B C D E	8 A B C D E
9 A B C D E	9 A B C D E
10 A B C D E	10 A B C D E

Equipment Identification	
Equipment	Use
1 A B C D E F G H I J	1 A B C D E F G H I J
2 A B C D E F G H I J	2 A B C D E F G H I J
3 A B C D E F G H I J	3 A B C D E F G H I J
4 A B C D E F G H I J	4 A B C D E F G H I J
5 A B C D E F G H I J	5 A B C D E F G H I J
6 A B C D E F G H I J	6 A B C D E F G H I J
7 A B C D E F G H I J	7 A B C D E F G H I J
8 A B C D E F G H I J	8 A B C D E F G H I J
9 A B C D E F G H I J	9 A B C D E F G H I J
10 A B C D E F G H I J	10 A B C D E F G H I J

Feed Identification	
Feed	Class.
1 A B C D E F G H I J	1 A B C
2 A B C D E F G H I J	2 A B C
3 A B C D E F G H I J	3 A B C
4 A B C D E F G H I J	4 A B C
5 A B C D E F G H I J	5 A B C
6 A B C D E F G H I J	6 A B C
7 A B C D E F G H I J	7 A B C
8 A B C D E F G H I J	8 A B C
9 A B C D E F G H I J	9 A B C
10 A B C D E F G H I J	10 A B C

Breeds of Livestock Master List

Beef	
Angus	British breed with highest number of registrations in the US. Noted for mothering ability and carcass marbling
Brahman	Bos Indicus breed known for heat and insect tolerance.
Brangus	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.
Charolais	High growth breed originally from France known for muscle and cutability.
Chianina	Developed in Italy. Known for size and growth, referred to as the tallest breed of cattle.
Gelbvieh	Developed in Germany, originally considered a dual purpose breed. Has good carcass cutability and relatively early puberty.
Hereford	Can be horned or polled. Hardy British breed which in recent years combined polled and horned associations.
Limousin	Developed in France with moderate growth rate and frame size and high carcass cutability.
Maine-Anjou	Developed in France by crossing the Durham and the Mancelle breeds. Has good muscling.
Red Angus	From Scotland. Considered maternal with good terminal-related performance.
Red Poll	Originally developed as a dual-purpose breed in England that would possess moderate size, would fatten quickly and also produce a good milk supply.
Salers	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.
Santa Gertrudis	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.
Shorthorn	Originated in England, with three distinct color patterns, considered a maternal breed.
Simmental	Originally developed in Switzerland for meat, milk and draft. Now noted for high growth rate, milking ability, and carcass cutability.
Texas Longhorn	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.
Sheep	
Cheviot	Small sized meat breed noted for its hardiness from Scotland
Columbia	Large frame US breed, developed from Lincolns and Rambouillets

Corriedale	Large frame wool breed developed from crossing Lincoln or Leicester rams on Merino ewes
Dorper	Primarily a mutton sheep, this breed was developed in South Africa and is one of the most fertile of sheep breeds.
Dorset	English, white face, meat breed known for out of season breeding
Finnsheep	Lighter muscled breed from Finland noted for being prolific

Hampshire	Large framed, English, meat breed with black face and wool cap
Katahdin	A hair sheep breed developed in the United States.
Lincoln	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
Montadale	Breed developed from Columbia and Cheviot cross noted for high quality carcasses and excellent wool
Merino	Very fine fleece breed with heavy wool production from Spain
Oxford	This breed originated as the result of crossing Cotswolds and Hampshires and produces the heaviest fleece of any of the Down breeds.
Rambouillet	Wool breed developed in France and Germany from Merino breed
Shropshire	Breed originating in England known as one of the heaviest wool producers among the medium wool breeds
Southdown	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.
Suffolk	Large framed, black faced breed known for high growth rate and carcass cutability from England
Tunis	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.

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>




Livestock Equipment Master List






Tool	Tool
Ammonia Sensor	Nasal Cannula
Antiseptic Applicator	Needle Teeth Clippers
Balling Gun	Nipple Waterer
Beef Cattle Frame Stick	Nose Lead
Beef Halter	Pig Obstetrical Forceps
Breeding Catheter	Pig Resuscitator
Cattle Clippers	Pistol Grip Syringe
Cattle AI Gun	Prolapse Ring Retainer
Cauterizing Tail Docker	Ralgro Implant Gun
Curry Comb	Pig Resuscitator
Dehorner	Ram Marking Harness
Disposable Syringe	Rumen Magnet
Drench Gun	Rumen Magnet
Ear Notchers	Scalpel
Ear Tag Pliers	Scotch Comb
Elastrator	Shearer's Screwdriver
Electric Fence Tester	Sheep Shears
Electronic ID Tag	Swine Breeding Spirette
Emasculator	Tattoo Pliers
Ewe Spoon	Test Tube
Foot Rot Shears	Transfer Needle
Forage Probe	Vacutainer
Freeze Branding Iron	Wool Card
Heat Detection Patch	


Hog Snare	
Hoof Chisel	
Hoof Trimmer	
Intravenous Set	
Knife Steel	
Lamb Boot	
Lamb Tube Feeder	





Livestock Skillathon Feedstuffs Classifications

Energy	
Whole Shelled Corn	
Cracked Corn	
Steam Flaked Corn	
Soybean Hulls	
Whole Grain Wheat	
Wheat Middlings	

Whole Grain Barley	
Cottonseed Hulls	
Whole Oats	
Rolled Oats	
Dried Sugar Beet Pulp	
Dried Whey	

Dry Molasses	
Protein	
Urea	
Corn Gluten Feed Pellets	
Corn Gluten Meal	
Distiller's Grain	

Whole Soybeans	
Soybean Meal	
Cottonseed Meal	
Fish Meal	
Blood Meal	
Dehydrated Alfalfa Meal Pellets	
Mineral	

Dicalcium Phosphate	
Ground Limestone	
Trace Mineral Salt	
White Salt	

Retail Meat ID Master List

Species	Primal	Retail	Cookery
Beef	Chuck	Top Blade Steak (Flat Iron)	Dry
Beef	Flank	Flank Steak	Dry/Moist
Beef	Loin	Porterhouse Steak	Dry
Beef	Loin	T-bone Steak	Dry
Beef	Loin	Top Loin Steak	Dry
Beef	Loin	Tenderloin Steak	Dry
Beef	Plate	Short Ribs	Moist
Beef	Rib	Rib Roast	Dry
Beef	Rib	Ribeye Steak, Bnls	Dry
Beef	Round	Round Steak, Bnls	Moist
Beef	Round	Bottom Round Roast	Dry/Moist
Beef	Round	Eye Round Steak	Dry/Moist
Beef	Round	Tip Roast - Cap Off	Dry/Moist
Beef	Round	Top Round Steak	Dry
Beef	Various	Cube Steak	Dry/Moist
Beef	Various	Beef for Stew	Moist
Beef	Various	Ground Beef	Dry
Beef	Variety	Heart	Dry/Moist
Beef	Variety	Kidney	Dry/Moist
Beef	Variety	Liver	Dry/Moist
Beef	Variety	Oxtail	Moist
Beef	Variety	Tongue	Dry/Moist
Pork	Ham/Leg	Pork Fresh Ham Center Slice	Dry/Moist
Pork	Ham/Leg	Pork Fresh Ham Shank Portion	Dry/Moist
Pork	Ham/Leg	Smoked Ham, Center Slice	Dry
Pork	Loin	Blade Chops	Dry/Moist

Pork	Loin	Blade Roast	Dry/Moist
Pork	Loin	Center Rib Roast	Dry
Pork	Loin	Country Style Ribs	Dry/Moist
Pork	Loin	Smoked Loin Chop	Dry
Pork	Loin	Loin Chops	Dry
Pork	Loin	Smoked Rib Chop	Dry
Pork	Loin	Rib Chops	Dry
Pork	Loin	Butterflied Chop Bnls	Dry
Pork	Shoulder	Arm Roast	Dry/Moist
Pork	Shoulder	Blade Boston Roast	Dry/Moist
Pork	Shoulder	Blade Steak	Dry/Moist
Pork	Side/Belly	Fresh Side	Moist
Pork	Side/Belly	Slab Bacon	Dry
Pork	Side/Belly	Sliced Bacon	Dry
Pork	Spareribs	Pork Spareribs	Dry/Moist
Pork	Variety	Heart	Dry/Moist
Pork	Variety	Kidney	Dry/Moist
Pork	Variety	Liver	Dry/Moist
Pork	Variety	Tongue	Dry/Moist
Lamb	Loin	Loin Chops	Dry
Lamb	Rib	Rib Chops	Dry
Lamb	Rib	Rib Chops Frenched	Dry
Lamb	Rib	Rib Roast	Dry
Lamb	Shoulder	Arm Chops	Dry/Moist
Lamb	Shoulder	Blade Chops	Dry/Moist
Lamb	Leg	Center Slice	Dry
Lamb	Variety	Heart	Dry/Moist
Lamb	Variety	Kidney	Dry/Moist
Lamb	Variety	Liver	Dry/Moist
Lamb	Variety	Tongue	Dry/Moist

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>. **See retail meat master list earlier in this document.**

2012 Livestock Skillathon - Retail Meat ID						
Fill in bubble for each question. Each meat cut consists of 4 questions.						Senior - A
1	1)	Species	A. Beef	B. Pork	C. Lamb	
	2)	Wholesale	A. Round	B. Flank	C. Plate	D. Loin E. Various
	3)	Retail	A. Blade Boston	B. Eye Round Roast	C. Round Tip Roast	D. Arm Chop E. Back Ribs
	4)	Cookery	A. Dry Heat	B. Moist Heat	C. Dry or Moist Heat	
2	5)	Species	A. Beef	B. Pork	C. Lamb	
	6)	Wholesale	A. Plate	B. Spareribs	C. Loin	D. Chuck E. Brisket
	7)	Retail	A. Arm Picnic	B. Blade Chop	C. Center Rib Roast	D. Petite Tender E. Loin Chop
	8)	Cookery	A. Dry Heat	B. Moist Heat	C. Dry or Moist Heat	

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/>. 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.**

2012 Livestock Skillathon - Feed ID							
Fill in bubble for each question. Each feed consists of 2 questions.							
1	1)	Feed	A. White Salt	B. Wheat Middlings	C. Cracked Corn	D. Dicalcium Phosphate	E. Trace Mineral Salt
		Sample	F. Soybean Meal	G. Dried Whey	H. Cottonseed Meal	I. Urea	J. Limestone
	2)	Nutrition	A. Energy	B. Protein	C. Minerals		
2	3)	Feed	A. Corn Gluten Meal	B. Dried Whey	C. Dry Molasses	D. Limestone	E. Cracked Corn
		Sample	F. Dicalcium Phosphate	G. Whole Kernel Corn	H. Distillers Grain	I. Rolled Oats	J. Urea
	4)	Nutrition	A. Energy	B. Protein	C. Minerals		

LIVESTOCK BREED IDENTIFICATION

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

Senior

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	1)	Breed	A. Yorkshire	B. Berkshire	C. Landrace	D. Chester White	E. Hampshire	
		2)	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	3)	Breed	A. Tennessee Woodenleg	B. Katahdin	C. Kiko	D. Boer	E. Dorper
			4)	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 (20 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.

2019 Livestock Skillathon – Fleece Judging

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

2016 Livestock Skillathon – Fleece Judging

Rank the four fleeces as they would be used in a premium line of heavy wool outerwear including jackets and sweaters.

2017 Livestock Skillathon – Hay Judging

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

No.	% DM	% CP	% TDN	Cost (\$/ton)
1	85.9	9.5	61.2	151
2	88.3	12.0	66.0	203
3	88.8	16.3	68.9	211
4	86.4	9.3	60.8	149

2016 Livestock Skillathon – Hay Judging

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

No.	% DM	% CP	% TDN	Cost (\$/ton)
1	87.9	9.9	61.2	151
2	88.7	16.1	68.7	211
3	88.3	15.7	68.1	206
4	87.6	9.7	60.8	149

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

2012 Indiana 4-H Livestock Skill-A-Thon Equipment ID						
Fill in bubble for each question. There are 2 questions for each item. Each piece of equipment is worth 3 points and use is worth 2 points						
1	Equipment	A. Vacutainer	B. Nasal Cannula	C. Disposable Syringe	D. Lamb Tube Feeder	E. Transfer Needle
		F. Balling Gun	G. Prolapse Ring Retainer	H. Ralgro Implant	I. Elastrator	J. Ewe Spoon
	Use	A. Breeding	B. Castration/Docking	C. Dehorning	D. Emergency/Preventative Treatment	E. Facilities/Restraint
		F. Fitting and Showing	G. Identification	H. Obstetrical/Neonatal	I. Vaccination/Administration	J. Diagnostic
2	Equipment	A. Nose Lead	B. Dehorner	C. Hog Snare	D. Hoof Trimmer	E. Cauterizing Tail Docker
		F. Elastrator	G. Nasal Cannula	H. Ram Marking Harness	I. Beef Cattle Frame Stick	J. Electric Fence Tester
	Use	A. Breeding	B. Castration/Docking	C. Dehorning	D. Emergency/Preventative Treatment	E. Facilities/Restraint
		F. Fitting and Showing	G. Identification	H. Obstetrical/Neonatal	I. Vaccination/Administration	J. Diagnostic

Junior

2012 Indiana 4-H Livestock Skill-A-Thon Equipment ID						
Fill in bubble for each question. Each piece of equipment is worth 5 points						
1	Equipment	A. Nasal Cannula	B. Disposable Syringe	C. Balling Gun	D. Transfer Needle	E. Ralgro Implant Gun
		F. Drench Gun	G. Elastrator	H. Test Tube	I. Lamb Tube Feeder	J. Breeding Catheter
2	Equipment	A. Drench Gun	B. Balling Gun	C. Lamb Tube Feeder	D. Ralgro Implant Gun	E. Antiseptic Applicator
		F. Disposable Syringe	G. Forage Probe	H. Heat Detection Patch	I. Hoof Chisel	J. Pig Resuscitator
3	Equipment	A. Beef Cattle Frame Stick	B. Cattle AI Gun	C. Dehorner	D. Hog Snare	E. Hoof Chisel
		F. Nose Lead	G. Prolapse Ring Retainer	H. Ralgro Implant Gun	I. Swine Breeding Spirette	J. Rumen Magnet

QUALITY ASSURANCE

2018 Livestock Skillathon – Quality Assurance – Junior Division

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

Moraxella Bovis Bacterin

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

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

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

PRESERVATIVE: Gentamicin.

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

U.S. Veterinary License No. 165A; Intervet Inc., Omaha, Nebraska 68103, USA; 1 800 211-3573 (USA) **NAC No.:** 1047153.4; v© 1990, 2009; Intervet Inc.; All rights reserved.

20 mL	10 Doses	NDC- 0061-0969-01	Code 065410	P13728-16
100 mL	50 Doses	0061-0969-02	065412	P13729-15

- This product is considered an
 - Antibiotic
 - Analgesic
 - Anthelmintic
 - None of the above
- This product should be administered
 - 3-6 days post calving
 - 3-6 months of age
 - 3-6 weeks prior to pinkeye season
 - None of the above are appropriate
- This particular product should only be administered to
 - Swine
 - Sheep
 - Beef
 - Goats
- This product is designed to _____ disease.
 - Treat
 - Prevent
- This product is administered to the animal by
 - Adding to feed
 - Adding to drinking water

- The control of the following harmful species of gastrointestinal roundworms, lungworms, eye worms, grubs (see precautions), sucking lice and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.
- DECTOMAX Injectable solution has been proven to effectively control infections and protect cattle from reinfection with *Cooperia oncophora* and *Haemonchus placei* for 14 days, *Ostertagia ostertagi* for 21 days and for *Cooperia punctata*, *Oesophagostomum radiatum* and *Dictyocaulus viviparus* for 28 days after treatment.

Product Highlights:

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

Dosage and Administration

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

Dosage and Administration: Administer DECTOMAX injectable solution at the recommended dosage of 1 mL (10 mg doramectin) per 110 lb body weight by either subcutaneous or intramuscular injection. Beef Quality Assurance guidelines recommend subcutaneous administration as the preferred route. Injections should be given using 16- to 18-gauge needles, regardless of administration route. Needles 1/2 to 3/4 inches in length are suggested for SC injections, which should be given under the loose skin in front of the shoulder. A 1 1/2-inch needle is suggested for IM injections. The only area for IM injections is the muscular region of the neck.

- Dectomax is not approved to use in sheep and goats, but can be given to sheep/goats only under the supervision of a veterinarian.
 - True
 - False
- The active ingredient in this product is
 - Dectomax
 - Dictyocaulus
 - Doramectin
 - None of the above
- How much of this product should be given to a 775-pound Charolais steer?
 - 5 mL
 - 7 mL
 - 9 mL
 - 77 mL
- When determining dosage rates, 1 cc is equal to 1.5 mL.
 - True
 - False
- This product is only available by a veterinary prescription.
 - True
 - False
- The preferred route of administration of Dectomax is
 - SC
 - IM
 - IV
 - All are appropriate
- This product is considered an
 - Antibiotic
 - Analgesic
 - Anthelmintic
 - None of the above
- This product is effective against internal parasites, but not external parasites.
 - True
 - False
- Regardless of route of administration, all injections should be given in the
 - Rump
 - Loin
 - Over the rib
 - Neck
- What size needle should be used for an IM injection of this product?
 - 14 gauge
 - 18 gauge
 - 20 gauge
 - All of the above are appropriate
- Dectomax may be given to all classes of beef cattle.
 - True
 - False

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

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

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

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

19. How much of this product should be given to an 1100pound, mid-gestation Angus cow? a. 5 mL c. 15 mL b. 10 mL d. Not labeled for pregnant cows

20. For an IM injection of this product, the dosage for a 330 pound heifer would be a. 2 ml c. 6 ml b. 3 ml d. Not appropriate for heifers

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

product

16. 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

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

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

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

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

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

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

2016 Livestock Skillathon – Quality Assurance Quiz – Senior Division – Individual

MoorMan's® ShowTec® Developer TY/Paylean®*

Medicated: A Complete Feed for Finishing Pigs Being Fed for Exhibition

Guaranteed Analysis

Crude Protein, min	18.0%	Phosphorus (P), min	0.6%
Lysine, min	1.0%	Salt (NaCl), min	0.2%
Crude Fat, min	2.5%	Salt (NaCl), max	0.7%
Crude Fiber, max	4.0%	Selenium (Se), min	0.3 ppm
Calcium (Ca), min	0.7%	Zinc (Zn), min	155 ppm
Calcium (Ca), max	1.2%	Biotin, min	0.14 mg/lb

Indications

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

Active Drug Ingredients

Ractopamine hydrochloride 9 grams/ton Tylosin 100 grams/ton

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

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

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

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

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

LEVASOLE® SOLUBLE PIG WORMER; Intervet/Schering-Plough Animal Health

(levamisole hydrochloride); Anthelmintic; For Use in Drinking Water

This bottle contains 18.15 grams of levamisole hydrochloride activity which will treat the following: 200 - 25 lb. pigs, or 100 - 50 lb. pigs, or 50 - 100 lb. pigs, or 25 - 200 lb. pigs.

RECOMMENDATIONS: Levasole (levamisole hydrochloride) is a broad-spectrum anthelmintic, and is effective against the following nematode infections in swine: Large Roundworms: (*Ascaris suum*); Nodular Worms:

(*Oesophagostomum* spp.); Lungworms: (*Metastrongylus* spp.); and Intestinal Threadworms: (*Strongyloides ransomi*).

WARNING: Keep out of reach of children.

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

DIRECTIONS FOR USE: Withholding water from pigs prior to treatment is not necessary for optimum anthelmintic efficacy and is not recommended during hot weather. Add 10 mL (2 teaspoonfuls) of the solution from the bottle to 1 gallon of water; mix thoroughly. Allow one gallon of medicated water for each 100 pounds of body weight of pigs to be treated. No other source of water should be offered. As soon as pigs have consumed all of the medicated water resume the use of regular water. NOTE: Careful estimates of pig weights are essential for the proper performance of this product. Pigs maintained under conditions of constant worm exposure may require retreatment within 4-5 weeks after the first treatment due to reinfection.

CAUTION: Consult veterinarian before administering levamisole to sick swine.

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

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

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

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

1. Since both of these products are considered medication, they are available by veterinary prescription only. a. True b. False
2. The anthelmintic listed may be given a. In feed c. In water b. Intravenously d. Intramuscularly
3. What is the active ingredient in the ShowTec Developer feed? a. Tylosin c. Ractopamine b. Levamisole d. Only A and C
4. Since neither product carries a withdrawal period, your barrow is cleared to be harvested at any time. a. True b. False
5. The legal maximum Crude Protein level of the above medicated feed is 18%. a. True b. False
6. By using Levasole, under no conditions will retreatment will be needed. a. True b. False
7. How many gallons of Levasole mixed solution should be provided to your barrow? a. 1.5 gallons b. 2 gallons b. 1.75 gallons d. 2.25 gallons
8. If your target harvest weight for your barrow is 265 pounds, how long should the feed above be used? a. For 21 days from app. 175-220 pounds until harvest at 265 pounds b. Beginning at 150 pounds for as long as it takes to get to 265 pounds c. Beginning at 175 pounds for as long as it takes to get to 265 pounds d. From birth to harvest e. Not appropriate to be fed to barrows
9. Based on the two labels, it is a reasonable assumption that Banamine should not be used on this animal while using these two medicated products at the same time. a. True c. False
10. The two main ingredients in the ShowTec Developer feed are a. Tylosin and Paylean c. Ground corn and Meat and bone meal b. Ground Corn and Soybean Hulls d. Ground corn and Dehulled soybean meal
11. Levasole is designed to _____ disease. a. Treat c. Prevent
12. By using the ShowTec Developer feed, at marketing, you should be aware of potential problems with your barrow, including a. Dead pigs c. Injured and/or fatigued pigs b. Lightweight pigs d. None of the above
13. Feeding the complete feed above to your pig from 100 pounds until reaching their target market weight is a. Acceptable use of feed b. Extra-label use of feed
14. Withholding water prior to treatment with Levasole is indicated except for extreme hot weather. a. True b. False
15. Both of the above products can be purchased OTC. a. True b. False
16. The minimum amount of Calcium by law that can actually be in the ShowTec Developer feed is a. 0.2% c. 0.9% b. 0.7% d. 1.2%
17. Which parasite if Levasole not recommended for the control of? a. Roundworms c. Threadworms b. Brownworms d. Lungworms
18. If your target breeding weight for your gilt is 305 pounds, how long should the feed above be used? a. For 21 days from app. 215-260 pounds until reaching 305 pounds b. Beginning at 225 pounds for as long as it takes to get to 305 pounds c. Beginning at 250 pounds for as long as it takes to get to 305 pounds d. From birth to breeding e. Not appropriate to be fed to breeding gilts

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

a. True b. False

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

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

22. Which of the above two products will control swine dysentery?

a. Anthelmintic b. Medicated feed

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

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

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

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

NUFLOR Injectable Solution – Intervet/Merck Animal Health – (FLORFENICOL) - 300 mg/mL

VETERINARY: For intramuscular (IM) and subcutaneous (SubQ) 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: NUFLOR is a solution of the synthetic antibiotic florfenicol. Each mL of NUFLOR contains 300 mg of florfenicol, 250 mg n-methyl-2-pyrrolidone, 150 mg propylene glycol, and polyethylene glycol qs.

INDICATIONS: NUFLOR is indicated for treatment of bovine respiratory disease (BRD), for treatment of bovine interdigital phlegmon (foot rot) and for the control of respiratory disease in cattle at high risk of developing BRD. DOSAGE AND ADMINISTRATION: For treatment of bovine respiratory disease (BRD) and bovine interdigital phlegmon (foot rot):

NUFLOR should be administered by IM injection to cattle at a dose rate of 20 mg/kg body weight (3 mL/100 lbs). A second dose should be administered 48 hours later. Alternatively, NUFLOR can be administered by a single SubQ injection to cattle at a dose rate of 40 mg/kg body weight (6 mL/100 lbs). Do not administer more than 10 mL at each site. The injection should be given only in the neck.

NOTE: Intramuscular injection may result in local tissue reaction which persists beyond 28 days. This may result in trim loss of edible tissue at slaughter. Tissue reaction at injection sites other than the neck is likely to be more severe. For control of respiratory disease in cattle at high-risk of developing BRD: NUFLOR should be administered by a single SubQ injection to cattle at a dose rate of 40 mg/kg body weight (6 mL/100 lbs). Do not administer more than 10 mL at each site. The injection should be given only in the neck.

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

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains materials that can be irritating to skin and eyes. Avoid direct contact with skin, eyes and clothing. In case of eye exposure, flush with water for 15 minutes. In case of 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: 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. Intramuscular injection may result in local tissue reaction which persists beyond 28 days. This may result in trim loss of edible tissue at slaughter. Tissue reaction at injection sites other than the neck is likely to be more severe.

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 28 days of the last intramuscular treatment. Animals intended for human consumption must not be slaughtered within 38 days of subcutaneous treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk

residues. A withdrawal period has not been established in preruminating calves. Do not use in calves to be processed for veal.
ADVERSE REACTIONS: Inappetence, decreased water consumption, or diarrhea may occur transiently following treatment.
MICROBIOLOGY: Florfenicol is a synthetic, broad-spectrum antibiotic active against many Gram-negative and Gram-positive bacteria isolated from domestic animals.

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

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

Animal Treatment Record Sheet

Date: 9/16/17

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

- The trade name for this product is a. Banamine c. Florfenicol
b. Nuflor d. Tylenol
- This product is available over the counter.
a. True b. False
- This product may be given
a. SubQ c. IM
b. IV d. Only A and C
- This product may be given to non-lactating swine.
a. True b. False
- If this product is given intramuscularly, the withdrawal time is
a. 18 days c. 38 days
b. 28 days d. 48 days
- Which of the treatments is an extra-label use of the listed substance?
a. Treatment 1 c. Treatment 3 e. Treatment 5
b. Treatment 2 d. Treatment 4
- This product is considered an
a. Antibiotic c. Anthelmintic
b. Analgesic d. None of the above
- For the treatment of BRD, _____ of this product should be given IM to a 500 pound steer.
a. 3 ml c. 30 ml
b. 15 ml d. 45 ml
- If the injection is given SubQ, no second administration is needed.
a. True b. False
- This product may cause tissue irritation and damage, resulting in trim loss.
a. True b. False
- When would it be acceptable to market animal 1610?
a. September 16 c. October 14
b. September 17 d. October 24

12. What size needle should be used for a SubQ injection of this product?
 a. 14 gauge c. 20 gauge
 b. 18 gauge d. All of the above are appropriate
13. This product may be given to calves intended to be processed for veal a. True b. False
14. This product does not require storage in a refrigerator.
 a. True b. False
15. For a SubQ injection of this product, the dosage for a 1000 pound beef cow would be
 a. 6 ml c. 60 ml
 b. 30 ml d. Not appropriate for beef cows
16. Regardless of the amount, it is appropriate to give the entire dosage in the same injection site.
 a. True b. False
17. After an animal is treated with this product, it should be identified in such a way as to ensure it remains on the farm through the withdrawal time.
 a. True b. False
18. A veterinarian may prescribe a higher dosage for this product.
 a. True b. False
19. What is the most appropriate location for Treatment 5?
 a. Neck region c. Rump
 b. Loin d. Feed
20. This product does present a mild risk to humans. Care should be taken.
 a. True b. False
21. This product is not labeled for the treatment of
 a. Footrot c. BVD
 b. BRD d. None of the above
22. This product may cause
 a. Decreased appetite c. Decreased water intake
 b. Diarrhea d. All of the above
23. After use of this product, the needle should be
 a. Discarded in the trash c. Disinfected with soap
 and used again
 b. Discarded in a lagoon d. Discarded in appropriate Sharps container
24. If the withdrawal time is doubled, this product can be administered to lactating dairy cows.
 a. True b. False
25. Use of this product is directed by BQA guidelines, which ensure food safety and animal well-being.
 a. True b. False

2017 Livestock Skillathon – Quality Assurance Quiz – Team Activity

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

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

Guaranteed Analysis

Crude Protein, min	18.0%
Lysine, min	1.0% Crude
Fat, min	2.5% Crude Fiber,
max	4.0%
Calcium (Ca), min	0.7%
Calcium (Ca), max	1.2%
Phosphorus (P), min	0.6%
Salt (NaCl), min	0.2%

Salt (NaCl), max	0.7%
Selenium (Se), min	0.3 ppm
Zinc (Zn), min	155 ppm
Biotin, min	0.14 mg/lb

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

Active Drug Ingredients:

Ractopamine hydrochloride	9 grams/ton
Tylosin	100 grams/ton

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

CAUTION: Ractopamine may increase the number of injured and/or fatigued pigs during marketing.

Not for use in breeding swine. Do not use in any finished feed containing in excess of 2% bentonite.

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

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

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

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

VETERINARY: For intramuscular use in swine. Not for use in breeding swine.

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

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

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

half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

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

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

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

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

PRECAUTIONS: As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal, renal and hepatic toxicity. Sensitivity to drug-associated adverse events varies with the individual patient. Patients at greatest risk for adverse events are those that are dehydrated, on concomitant diuretic therapy, or those with existing renal, cardiovascular, and/or hepatic dysfunction. NSAIDs may inhibit the prostaglandins that maintain normal homeostatic function. Such prostaglandin effects may result in clinically significant disease in patients with underlying or pre-existing disease that has not been previously diagnosed. Since many

NSAIDs possess the potential to produce gastrointestinal ulceration, concomitant use of flunixin meglumine with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided. Not for use in breeding swine. The reproductive effects of BANAMINE-S Injectable Solution have not been investigated in this class of swine. Intramuscular injection may cause local tissue irritation and damage. In an injection site irritation study, the tissue damage did not resolve in all animals by Day 28 post-injection. This may result in trim loss of edible tissue at slaughter. **SAFETY:** Flunixin was mildly irritating at the injection sites. No other flunixin-related changes (adverse reactions) were noted in swine administered a 1X (2.2 mg/kg; 1.0 mg/lb) dose for 9 days. Minimal toxicity manifested itself as statistically significant increased spleen weight at elevated doses (5X or higher daily for 9 days) with no change in normal microscopic architecture.

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

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

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

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

3 TO 12 DAY TREATMENT REGIMEN FOR THE REMOVAL OF:

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

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

ACTIVE DRUG INGREDIENT:

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

GUARANTEED ANALYSIS:

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

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

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

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

Pounds of Safe-Guard® EZ Scoop® premix per ton of swine feed based on pig weight and average daily feed consumption:							
Pig Wt. (lbs)	Average daily feed consumption (lbs)	Treatment Period					
		3 days		6 days		12 days	
		lbs premix	Treats approximately:	lbs premix	Treats approximately:	lbs premix	Treats approximately:
50	3.20	5.2	208 pigs	2.6	104 pigs	1.3	52 pigs
75	4.25	5.8	156 pigs	2.9	78 pigs	1.5	39 pigs
100	5.30	6.2	125 pigs	3.1	62 pigs	1.6	31 pigs
150	6.80	7.3	98 pigs	3.7	49 pigs	1.8	24 pigs
200	8.00	8.3	83 pigs	4.1	41 pigs	2.1	20 pigs

For Individual 400 lb Sow Feeding: Mix 1 level scoop (1.07 ounces) of Safe-Guard® EZ Scoop® premix into 4 to 6 lbs of an individual 400 lb sow’s daily ration and feed once daily for 3 consecutive days.

There is no pre-slaughter withdrawal period as Safe-Guard® EZ Scoop® can be fed to day of slaughter.

CONSULT YOUR VETERINARIAN FOR ASSISTANCE IN THE DIAGNOSIS, TREATMENT AND CONTROL OF PARASITISM.

Store at or below 25°C (77°F).

Animal Treatment Record Sheet Date: 9/16/17

Animal

Withdrawal Time n By Give # Species ID Gender Weight Product Route Dosage

1	Swine	1-2	Sow	550 lbs	Banamine	IM	11 mL	12 days	JP
2	Swine	3-5	Barrow	300 lbs	Banamine	IM	6 mL	12 days	JP
3	Swine	3-6	Gilt	350 lbs	Banamine	IM	7 mL	12 days	JP
4	Swine	2-3	Barrow	250 lbs	Banamine	SubQ	5 mL	12 days	JP
5	Swine	9-7	Barrow	200 lbs	Banamine	IM	4 mL	12 days	JP

1. All three products may be used simultaneously.

a. True b. False

2. The anthelmintic listed is administered

a. In feed c. In water

- b. Intravenously d. Intramuscularly
3. Assuming a barrow is fed ShowTec and Safeguard, if it does not show up on the Treatment Record Sheet, when can it be marketed?
- a. September 16 c. September 28
b. September 20 d. October 8
4. Which of the above products may only be used by veterinary prescription?
- a. Banamine c. Safeguard
b. ShowTech Developer feed d. None of the above
5. By using the ShowTec Developer feed, at marketing, you should be aware of potential problems with your barrow, including
- a. Dead pigs c. Injured and/or fatigued pigs
b. Lightweight pigs d. None of the above
6. The minimum amount of Calcium by law that can actually be in the ShowTec Developer feed is a. 0.2% c. 0.9%
- b. 0.7% d. 1.2%
7. Which of the three products is considered an antibiotic?
- a. Banamine c. Safeguard
b. Ractopamine d. None of the above
8. Which of the treatments is an extra-label use of the listed substance?
- a. Treatment 1 c. Treatment 4 e. None of the above
b. Treatment 2 d. Treatments 2 & 4
9. The withdrawal period for Safeguard is
- a. 0 days c. 12 days
b. 7 days d. 21 days
10. When can be potential litter mates be marketed?
- a. September 16 c. September 28
b. September 20 d. October 8
11. The dosage for Banamine can be increased by order of
- a. Veterinarian c. Can never be increased
b. Banamine salesman
12. Which of the three products is considered an anthelmintic?
- a. Banamine c. Safeguard
b. ShowTech Developer feed d. None of the above
13. After use of this product, the needle should be
- a. Discarded in the trash c. Discarded in the lagoon
b. Disinfected and reused d. Discarded in appropriate Sharps container
14. How much Banamine should be given to a 150 pound barrow? a. 2 mL c. 4 mL
b. 3 mL d. 5 mL
15. When group feeding Safeguard to 100 pound barrows, how many pigs can be treated if 1.6 pounds are mixed in the feed?
- a. 20 pigs c. 31 pigs
b. 24 pigs d. 39 pigs

16. After a pig is treated with Banamine, it should be identified in such a way as to ensure it remains on the farm through the withdrawal time.
- True
 - False
17. The two main ingredients in the ShowTec Developer feed are
- Tylosin and Paylean
 - Dehulled Soybean meal and Soybean hulls
 - Ground corn and Soybean hulls
 - Ground corn and Dehulled soybean meal
18. Which of the three products is considered an analgesic?
- Banamine
 - ShowTech Developer feed
 - Safeguard
 - None of the above
19. How much Banamine should be given to a 600 pound sow?
- 10 mL
 - 12 mL
 - 14 mL
 - Not appropriate for breeding swine
20. The trade name for Ractopamine in ShowTech developer feed is
- Tylosin
 - ShowTech
 - Paylean
 - Safeguard
21. How many separate injections should be used for Treatment 1?
- 1
 - 2
 - 3
 - 4
22. Safeguard is appropriate for all classes of swine.
- True
 - False
23. ShowTech developer feed should be fed for the last__days prior to slaughter.
- 14 days
 - 21 days
 - 28 days
 - should be fed from 150 lbs until harvest
24. Banamine and Safeguard both require refrigeration to remain effective.
- True
 - False
25. Body condition scoring is useful to assess the adequacy of the
- Vaccination program
 - Reproductive program
 - Genetic program
 - Nutritional program

2016 Livestock Skillathon – Quality Assurance Quiz – Team Activity

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

BANAMINE®-S INJECTABLE SOLUTION - Intervet/Schering-Plough Animal Health

(FLUNIXIN MEGLUMINE) 50 mg/mL

Veterinary: For intramuscular use in swine. Not for use in breeding swine.

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

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

Pharmacology: Flunixin meglumine is a potent, non-narcotic, non-steroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test. Flunixin is known to persist in inflammatory tissues¹ and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations². Therefore, prediction of drug concentrations based upon estimated plasma terminal elimination half-life will likely underestimate both the duration of drug action and the concentration of drug remaining at the site of activity.

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

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

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

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

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

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

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

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

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

MATRIX® (altrenogest)

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.

Animal Treatment Record Sheet Date: 9/17/16

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

1. What species are these two products designed for?
 - a. Goat
 - b. Sheep
 - c. Swine
 - d. Beef Cattle
2. What would be the correct dosage of the NSAID for a 200 pound barrow?
 - a. 1 mL
 - b. 2 mL
 - c. 3 mL
 - d. 4 mL
 - e. Not appropriate for barrows
3. When is it acceptable to market the 5-8 barrow?
 - a. September 17
 - b. September 18
 - c. September 25
 - d. September 29
 - e. October 8
4. Which of the treatments is an extra-label use of the listed substance?
 - a. Treatment 1
 - b. Treatment 3
 - c. Treatment 5
 - d. None of the above
 - e. B and C
5. It costs less money to treat disease than it does to prevent disease.
 - a. True
 - b. False
6. The estrus synchronization substance can be given to barrows to help them grow faster and appear with better conformation.
 - a. True
 - b. False
7. A barrow that is marketed 10 days after being given the analgesic is likely to
 - a. Be worth more money
 - b. Have a drug residue
 - c. All of the above
 - d. None of the above
8. How many Good Production Practices are there in the Youth PQA Plus program?
 - a. 8
 - b. 9
 - c. 10
 - d. 11
 - e. None of the above
9. What would be the correct dosage of Matrix for a 350 pound gilt?
 - a. 3.8 mL
 - b. 6.8 mL
 - c. 15 mL
 - d. 22 mL
 - e. Not appropriate for gilts
10. What would be the correct dosage of Matrix for a 150 pound ewe?
 - a. 3.8 mL
 - b. 6.8 mL
 - c. 15 mL
 - d. 22 mL
 - e. Not appropriate for ewes
11. It would have been acceptable for Treatment 4 to have been given SubQ.
 - a. True
 - b. False
12. What is the withdrawal time for flunixin?
 - a. 12 days
 - b. 21 days
 - c. 28 days
 - d. None of the above

13. What is the most appropriate location for Treatment 2?
- a. Neck region c. Loin region
 - b. Loin d. Feed
14. Both of these products are considered OTC products.
- a. True b. False
15. It is acceptable to freeze the NSAID for proper long-term storage?
- a. True b. False
16. Standing heat typically occurs _____ after the conclusion of 14-day treatment of Matrix.
- a. Immediately c. 4-9 days
 - b. 2-4 days d. 1 month
17. When is it acceptable to market the 4-2 gilt?
- a. September 17 c. September 25 e. October 8
 - b. September 18 d. September 29
18. Body condition scoring is useful to assess the adequacy of the
- a. Vaccination program c. Genetic program
 - b. Reproductive program d. Nutritional program
19. The active ingredient in the synchronization product is
- a. Rotavirus c. Clostridium
 - b. Enterotoxemia d. Altrenogest
20. A veterinarian could prescribe flunixin for use in sheep.
- a. True b. False
21. Which of the treatments had too much of the substance given?
- a. Treatment 1 c. Treatment 3 e. Treatment 5
 - b. Treatment 2 d. Treatment 4
22. Where should the estrus synchronization product be administered?
- a. Neck c. Water
 - b. Under the skin d. Feed
23. Which of the following is a way that disease pathogens can spread?
- a. Pets c. New animals e. All of the above
 - b. Vehicles d. Humans
24. Which gauge needle is most appropriate for Treatment 5?
- a. 14 c. 20
 - b. 16 d. None of the above
25. The dosage is the amount of medication to be given over a week's time.
- a. True b. False

QUIZ

2018 Livestock Skillathon – Industry Quiz – Junior Division

1. A drug that can be purchased at a livestock supply store is considered
 - a. Prescription
 - b. Over the counter
 - c. Illegal
 - d. None of the above
2. PSE as it relates to pork carcasses stands for
 - a. Pale Stale Exudative
 - b. Pale Soft Exudative
 - c. Pork Soft Exudative
 - d. Pork Stale Exudative
3. Parturition in goats is called
 - a. Lambing
 - b. Kidding
 - c. Calving
 - d. Farrowing
4. The compartment in a ewe's stomach that is the fermentation vat is the
 - a. Rumen
 - b. Reticulum
 - c. Omasum
 - d. Abomasum
5. For Sheep, which Quality Grade would be generally considered one grade worse than Choice?
 - a. Prime
 - b. Select
 - c. Good
 - d. Utility
6. On the 1-9 Body Condition Scoring System, a 1 is considered
 - a. Thin
 - b. Adequate
 - c. Ideal
 - d. Obese
7. A feedstuff high in fiber is classified as a
 - a. Grain
 - b. Meal
 - c. Concentrate
 - d. Roughage
8. A polled heifer was
 - a. Dehorned after birth
 - b. Used in a research project
 - c. Born without horns
 - d. None of the above
9. Sheep and beef cattle are known as ruminants and carnivores.
 - a. True
 - b. False
10. Based on the below Birth Weight EPD's, which Angus bull should be expected to produce the smallest calves at birth?

- a. 0.1
- b. 1.1
- c. 2.1
- d. 3.1

11. What is the term for sheep meat harvested from an animal less than one year of age?

- a. Mature lamb
- b. Chevon
- c. Lamb
- d. Mutton

12. What breed of sheep is best known for out of season breeding?

- a. Dorset
- b. Southdown
- c. Montadale
- d. None of the above

13. Which is a main product of a beef seedstock operation?

- a. Beef carcasses
- b. Feeder cattle
- c. Show steers
- d. Breeding bulls

14. The most terminal swine breed below is _____.

- a. Yorkshire
- b. Duroc
- c. Landrace
- d. None of the above are considered terminal

15. Injections made directly in the vein are called

- a. SQ
- b. IV
- c. IM
- d. IN

16. The first official beef breed established in the US is

- a. Santa Gertrudis
- b. Santa Cruz
- c. Brangus
- d. Brahman

17. The presence of a break joint on a sheep carcass signifies

- a. Mutton carcass
- b. Break carcass
- c. Lamb carcass
- d. None of the above

18. What two breeds make up the composite beef breed known as Balancer?

- a. Angus and Simmental
- b. Angus and Gelbvieh
- c. Angus and Limousin
- d. Gelbvieh and Limousin



19. Which feedstuff below typically has the most protein?

- a. Cracked corn
- b. Soybean hulls
- c. Soybean meal
- d. Wheat midds

20. What is the gestation period for a sow?
- a. 114 days
 - b. 150 days
 - c. 278 days
 - d. 325 days
21. A castrated male pig is known as a
- a. Buck
 - b. Barrow
 - c. Steer
 - d. Wether
22. A beef animal that has extremely straight hindlegs is best described as being
- a. Cow-hocked
 - b. Sickle-hocked
 - c. Structurally sound
 - d. Post-legged
23. In cattle, a female born twin to a bull is called a _____.
- a. Heiferette
 - b. Freemartin
 - c. Heifer
 - d. Barren heifer
24. The typically dressing percentage for beef cattle is
- a. 42%
 - b. 52%
 - c. 62%
 - d. 72%
25. The typical breeding season for sheep is
- a. January to April
 - b. April to July
 - c. August to December
 - d. January to December

2018 Livestock Skillathon – Industry Quiz – Senior Division

1. What would the USDA Yield Grade be for a market lamb carcass with 0.17 inches of fat?
 - a. 1.3
 - b. 1.7
 - c. 1.9
 - d. 2.1
2. What two breeds make up the composite breed Durham Red?
 - a. Red Angus and Red Poll
 - b. Shorthorn and Gelbvieh
 - c. Shorthorn and Red Angus
 - d. Simmental and Shorthorn
3. Which of the below is a plant-based protein source used in swine diets?
 - a. Soybean meal
 - b. Whey
 - c. Blood meal
 - d. None of the above

4. White muscle disease in lambs is a deficiency of
- Iron
 - Selenium
 - Copper
 - Zinc
5. Which will increase sexual activity in sheep?
- Less light
 - Lower level of nutrition
 - Higher temperatures
 - More light
6. To improve the reproductive and maternal performance of a cowherd, which of the following management practices would produce the fastest results?
- Implement a cross breeding program
 - Maximize protein and energy levels in creep feed
 - Select bulls that have a superior ADG
 - Purchase bulls known for fertility
7. Which portion of a gilt's digestive tract's main functions are nutrient absorption?
- Duodenum
 - Stomach
 - Jejunum
 - Large intestine
8. The fiber produced by an Angora goat is called
- Wool
 - Hair
 - Mohair
 - Silk
9. CIDR's are commonly used in estrous synchronization programs. They continually release what hormone?
- Estrogen
 - Prostaglandin
 - Testosterone
 - Progesterone
10. Humans can contract soremouth from sheep. What is this disease known as in humans?
- Soremouth
 - Orf
 - Cold sores
 - Hepatitis
11. The first milk produced by the dam after she gives birth, which is extremely important to the future health of the young is called
- Colostrum
 - First milk
 - Whole milk
 - Milkstrum
12. Which below steak would be from the highest cutability beef carcass?
- 
 - 
13. As a barrow gets older and heavier, its protein requirement increases. a. True b. False
14. Which ram below is the least susceptible to scrapie based on their Codon 171 Genotype?
- QQ
 - QR
 - RR
 - Codon 171 is not related to scrapie
15. To maximize efficiency of a beef operation, the generation interval of the herd should be decreased. To do this, heifers should be bred for first time by _____ months of age and _____% of their mature weight. a. 12 months and 65% c. 20 months and 85%

- b. 15 months and 65% d. 24 months and 85%

16. Which of the following is an animal based protein used in nursery pig diets?

- a. Soybean meal c. Alfalfa meal
b. Blood meal d. None of the above

17. 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

18. Overeating disease is called _____.

- a. Enterotoxemia c. Bloat
b. Anthrax d. Johne's disease

19. Lining the intestinal wall is _____ that increases the surface area of the intestine and as a result increases absorption.

- a. Papillae c. Epithelial cells
b. Duodenal cells d. Villa

20. What mineral is known to kill sheep at levels commonly fed to beef cattle?

- a. Copper c. Selenium
b. Iron d. Zinc

21. Volatile fatty acids are a main product of ruminal fermentation that are used for energy by the animal. Which of the following is one of main three volatile fatty acids?

- a. Acetate c. Proprionate e. Only A and C
b. Butyrate d. All of the above

22. Weaned, growing and finishing type hogs are fed special formulated diets for each specific growth period. These diets are known as _____ diets.

- a. Phase c. Micro-nutrient
b. Least Cost d. Focused

23. The beef breed known for heat tolerance is

- a. Angus c. Brahman
b. Simmental d. Chianina

24. For ruminants, urea is a good source of

- a. Protein c. Energy
b. Non-protein nitrogen d. Minerals

25. Sheep are very gregarious, which indicates a strong

- a. Breeding behavior c. Susceptibility to heat stress
b. Flocking instinct d. Anti-social behavior

2019 Livestock Skillathon – Industry Quiz – Junior Division

1. _____ are growths on the skin of cattle caused by a virus.

- a. Warts c. Edemas

- b. Ringworms d. Trichomoniasis
2. The most common sheep identification method is
a. Retinal Scan c. Ear Tag
b. Tattoo d. Microchip
3. Which wholesale cuts make up the hindsaddle on a market lamb?
a. The loin and leg c. The loin and rack
b. The loin and breast d. The rack and breast
4. Parturition in swine is called
a. Lambing c. Calving
b. Kidding d. Farrowing
5. A visual evaluation of the amount of muscle on a hog is best seen by looking at the _____ view of the hog.
a. Rear c. Top
b. Side d. Front
6. Which is a USDA Quality Grade ?
a. Prime c. Good
b. Superior d. Poor
7. When selecting a bull to breed to heifers, which piece of information would be helpful in predicting the birth weight of his calves?
a. His birth weight c. His sire's birth weight
b. His birth weight EPD d. His frame size
8. Founder affects which part of the body?
a. Eyes c. Spine
b. Feet d. Mouth
9. Feed additives used to prevent disease and promote growth are called
a. Antibiotics c. Hormones
b. Antioxidants d. Anthelmintics
10. The amount of cover a on a market steer is referred to as
a. Marbling c. Fleshing
b. Finish d. Carcass Merit
11. Which of the following is considered as a value added beef program?
a. Certified Hereford Beef c. Elite Shorthorn Program
b. Superior Simmental Beef d. Value Added Maine Anjou
12. Ultrasound can be used to?
a. Compare intramuscular fat c. Determine pregnancy status
b. Determine sex of fetus d. All of the above
13. What is the average normal body temperature for healthy swine in degrees Fahrenheit?

- a. 98.6
- b. 102.5
- c. 103.4
- d. 103.1

14. Which one of the following is a way for livestock producers to help calves bring more at a stockyard?

- a. Selling baby calves
- b. Selling bull calves
- c. Selling similar breed, age, and weight calves together
- d. Selling unweaned calves

15. _____ are the “building blocks” of proteins.

- a. Vitamins
- b. Fats
- c. Carbohydrates
- d. Amino Acids

16. What hormone is responsible for the masculine appearance in animals?

- a. Estrogen
- b. Testosterone
- c. Progesterone
- d. Masterone

17. What is the best way to help prevent diseases in a goat operation?

- a. Vaccinate animals
- b. Separate new breeding stock from the herd
- c. Keep building and pasture clean
- d. All of these

18. Which of the following is a monogastric?

- a. Steer
- b. Wether
- c. Barrow
- d. None of the above

19. What is creeping?

- a. Locking up a bull at night
- b. Exercising steers
- c. Providing extra feed for nursing calves
- d. None of the above

20. Who is the current Secretary of Agriculture?

- a. Mitch Daniels
- b. Mike Pence
- c. Tom Vilsack
- d. Sonny Perdue

21. The average age of puberty in sheep is ?

- a. 3 months
- b. 6 months
- c. 8 months
- d. 12 months

22. The genetic makeup of an animal is called its?

- a. Phenotype
- b. Recessiveness
- c. Dominance
- d. Genotype

23. Your steer has gained 100 pounds in the last 30 days, consuming 750 pounds of feed which costs a total of \$75. What is was the steer’s average daily gain?

- a. 3.0 lb
- b. .75 lb
- c. 3.3 lb
- d. 7.5 lb

24. Which nutrients of human interest are associated with the fat on meat products?

- a. Protein
- b. Saturated fatty acids
- c. Cholesterol
- d. All of these

25. In swine production which of the following are not symptoms of overcrowding?

- a. Tail biting
- b. Cannibalism
- c. Decreased feed consumption
- d. Reduced gain

LIVESTOCK BREEDING SCENARIO – TEAM

2018 Livestock Skillathon – Team Quality Assurance

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

PANACUR® POWDER 4%

Description: Broad-spectrum 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)	Oesophagostomum spp. (nodular worms).
Metastrongylus spp. (lungworm) (as an aid in control)	Ascaris suum (eelworm).
Stephanurus dentatus (kidney worm) (as an aid in control) has an ovicidal effect on nematode eggs.	Trichuris suis (whipworm). Panacur®

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:

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

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:*

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

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

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

Side effects: None.

Contra-indications: None.

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

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

NUFLOR® TYPE A MEDICATED ARTICLE - Intervet/Merck Animal Health (FLORFENICOL)

Type A Medicated Article for Swine
For Use in Swine Feeds Only
Do Not Feed Undiluted

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

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

Inert ingredients: Limestone and Propylene glycol

Description: Each kg of Nufloor® 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:

Starting Concentration of Nuflor® Type A Medicated Article for Swine (Grams/pound)	Amount of Type A Medicated Article to add per ton (Pounds)	Resulting Concentration in Type C Medicated Feed	
		Grams/ton	ppm
18.2	10	182	200

Feeding Directions: Feed medicated feed as the sole ration for 5 consecutive days to swine to deliver 10 mg florfenicol per kg body weight per day.

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

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

For customer service or a copy of the MSDS, call 1-800-521-5767.

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

Cyclix® P

Description

Cyclix® P is a solution for injection containing cloprostenol, a potent synthetic analogue of prostaglandin F_{2a}.

Composition

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

Formulation

Solution for injections.

Indications

Pigs

Induction or synchronization of farrowing from day 113 of pregnancy onwards (day 1 of pregnancy is the last day of natural or artificial insemination).

This offers an opportunity for more efficient and convenient management under a variety of systems:

- Allows for batch management.
- Minimizes farrowing at weekends, public holidays and during the night hours.
- Facilitates supervision of farrowing and inter-fostering.

Dosage and method of administration

Sows - 1ml, corresponding to 0.25 mg cloprostenol/animal intramuscularly.

Withholding period

Not required for meat

(National regulations should be observed)

Presentation

Vials of 2ml, 20ml and 50ml.

Storage

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

Contraindications

High standards of biosecurity must be observed when injecting groups of females in order to prevent induction of infection or spreading of infectious diseases between treated animals.

Pigs

Induction of farrowing before 113 days of pregnancy should not be attempted in order to avoid the birth of incompletely matured piglets.

Precautions

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

General Reminder

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

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

Veterinary: For intramuscular use in swine. Not for use in breeding swine.

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

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

Pharmacology: Flunixin meglumine is a potent, non-narcotic, non-steroidal, analgesic agent with anti-inflammatory and antipyretic activity. It is significantly more potent than pentazocine, meperidine, and codeine as an analgesic in the rat yeast paw test. Flunixin is known to persist in inflammatory tissues¹ and is associated with anti-inflammatory properties which extend well beyond the period associated with detectable plasma drug concentrations². 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 $AUC_{(0-10Q)}$ 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).

Animal Treatment Record Sheet**Date: 9/29/18**

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

26. According to the treatment record, what is the withdrawal time for the anthelmintic?
- 0 days
 - 12 days
 - 13 days
 - No anthelmintic was given
27. How many injection sites should be used if giving 12 ml of Banamine to a pig?
- 1
 - 2
 - 3
 - 4
28. Which of the products is considered an antibiotic?
- Banamine
 - Cyclix
 - Nuflor
 - Panacur
 - None of the above
29. Of the products that are administered in the feed, which one requires supervision by a veterinarian?
- Banamine
 - Cyclix
 - Nuflor
 - Panacur
 - None of the above
30. Of the products that are administered via injection, which one is given subcutaneously?
- Banamine
 - Cyclix
 - Nuflor
 - Panacur
 - None of the above
31. What location on a barrow should the NSAID be administered?
- Loin
 - Ham
 - Orally
 - Neck
32. Which of the products can cause the premature birth of pigs?
- Banamine
 - Cyclix
 - Nuflor
 - Panacur
 - None of the above
33. How much of the product containing cloprostenol should be given to a 3rd parity, 500-pound sow?
- 1 ml
 - 2 ml
 - 3 ml
 - Not appropriate for a 3rd parity sow
34. Which of the products is considered an analgesic?
- Banamine
 - Cyclix
 - Nuflor
 - Panacur
 - None of the above
35. Which of the products can be used for herd management instead of treatment or prevention of disease?

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
<http://www.livestockexpo.org/docs/Premium%20Book/Judging%20Contests/Skillathon%20Rules.pdf>

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

Swine Resources

OSU Swine Resource Handbook

For market and breeding projects
4-H circular 134 R
The Ohio State University

National Hog Farmer monthly periodical

7900 International Drive, Suite 300
Minneapolis, MN 5542

Seedstock Edge: www.nationalswine.com

National Swine Registry West
Lafayette, IN

Nasco Farm & Ranch Catalog

Fort Atkinson, WI
1-800-558-9595

Swine Learning Lab Interactive CD The

Ohio State University
Phone: 614-292-4848

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

Illinois Trail - Technology and Research: Allied & Integrated Livestock Linkages

<http://www.livestocktrail.uiuc.edu/>

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

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

Quality Assurance materials from National Pork Board PQA
Level I, II and III – change for 2008

Phone: 515-223-2600

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

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

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

Beef Resources

OSU Beef Resource Handbook

4-H circular 117R The Ohio State University
<http://www.ag.ohiostate.edu/~buckpubs/>

Illinois Beef Handbook

Beef Production and Management Decisions 2nd Edition by Robert Taylor

Feeds and Feeding by Morrison and Morrison

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

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

Sheep Resources

OSU Sheep Resource Handbook

4-H circular 194 R
The Ohio State University
PH. 614-292-1607

Goat Resources

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

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

International Boer Goat Association

P. O. Box 663
Spicewood, TX 78669
Toll Free phone: 877-640-4242

Toll Free Fax: 877-640-4060

CCS Meat Goat Manuals – available from your County Extension Office

Forage Resources

Forages CD-ROM Companion

Volume 1 – An Introduction to Grassland Agriculture

Volume 2 – The Science of Grassland Agriculture

Iowa State University Press

Ames, IA 50014

Orders: 1-800-862-6657

Office: 1-515-292-3348

Forages-The Science of Grassland Agriculture, 4th Edition by Maurice

E. Heath, Robert F. Barnes, Darrel S. Metcalfe

Iowa State University Press

Ames, IA 50014

Orders: 1-800-862-6657

Pennsylvania Forage Handbook

Penn State College of Agricultural Sciences 217

Ag Administration Bldg.

University Park, PA 16802

Phone: 814-865-2541

Southern Forages

Circulation Department

Potash & Phosphate Institute

655 Engineering Drive, Suite 110

Norcross, Georgia 30092-2843

Phone: 770-447-0335

Price: \$25.00

Meat Resources

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

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/>