Name_____ANSWER KEY_____ Contestant #_____County_____

Intermediate Retail Meat Cut Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each retail meat cut. Use capital letters and write neatly. **Intermediates** provide answers for retail cut name and species of cut. Each question is worth 5 points (100 points total for Intermediates).

	Retail Cut Name	Species of Cut
1.	48	L
2.	13	B
3.	66	P
4.	2	B
5.	63	L
6.	77	P
7.	50	L
8.	73	P
9.	46	B
10.	57	L

Retail Names – to be used in answer column 1 Intermediates

Beef Retail Meat Cuts

1. Beef for stew
2. Brisket, point half
3. Brisket, whole
4. Arm roast
5. Arm roast, boneless
6. Arm steak
7. Arm steak, boneless
8. Blade roast
9. Blade steak
10. 7-bone roast
11. 7-bone steak
12. Flank steak
13. Sirloin steak, flat bone
14. Sirloin steak, pin bone
15. Sirloin steak, round bone
16. Sirloin steak, wedge bone
17. Sirloin steak, shell
18. Sirloin steak, boneless
19. Tenderloin steak
20. Porterhouse steak
21. T-bone steak
22. Top loin steak
23. Top loin steak, boneless
24. Short ribs
25. Skirt steak
26. Rib roast, large end
27. Rib roast, small end
28. Rib steak, small end
29. Rib steak, small end, boneless
30. Ribeye roast
31. Ribeye steak
32. Bottom round roast
33. Bottom round steak
34. Eye round roast
35. Eye round steak
36. Heel of round roast
37. Rump roast, boneless
38. Round steak
39. Round Steak, boneless
40. Tip roast
41. Tip roast, cap off
42. Tip steak
43. Tip steak, cap off
44. Top round roast
45. Top round steak
46. Cross cuts
47. Cross cuts, boneless

Lamb Retail Meat Cuts

48. Breast
49. Breast riblets
50. American style roast
51. Leg Center slice
52. French style roast
53. Leg shank half
54. Sirloin chop
55. Leg sirloin half
56. Loin chop
57. Loin double chop
58. Loin roast
59. Rib chop
60. Rib roast
61. Rib roast, boneless
62. Shanks
63. Blade chop
64. Neck slice
65. Shoulder square cut

Pork Retail Meat Cuts

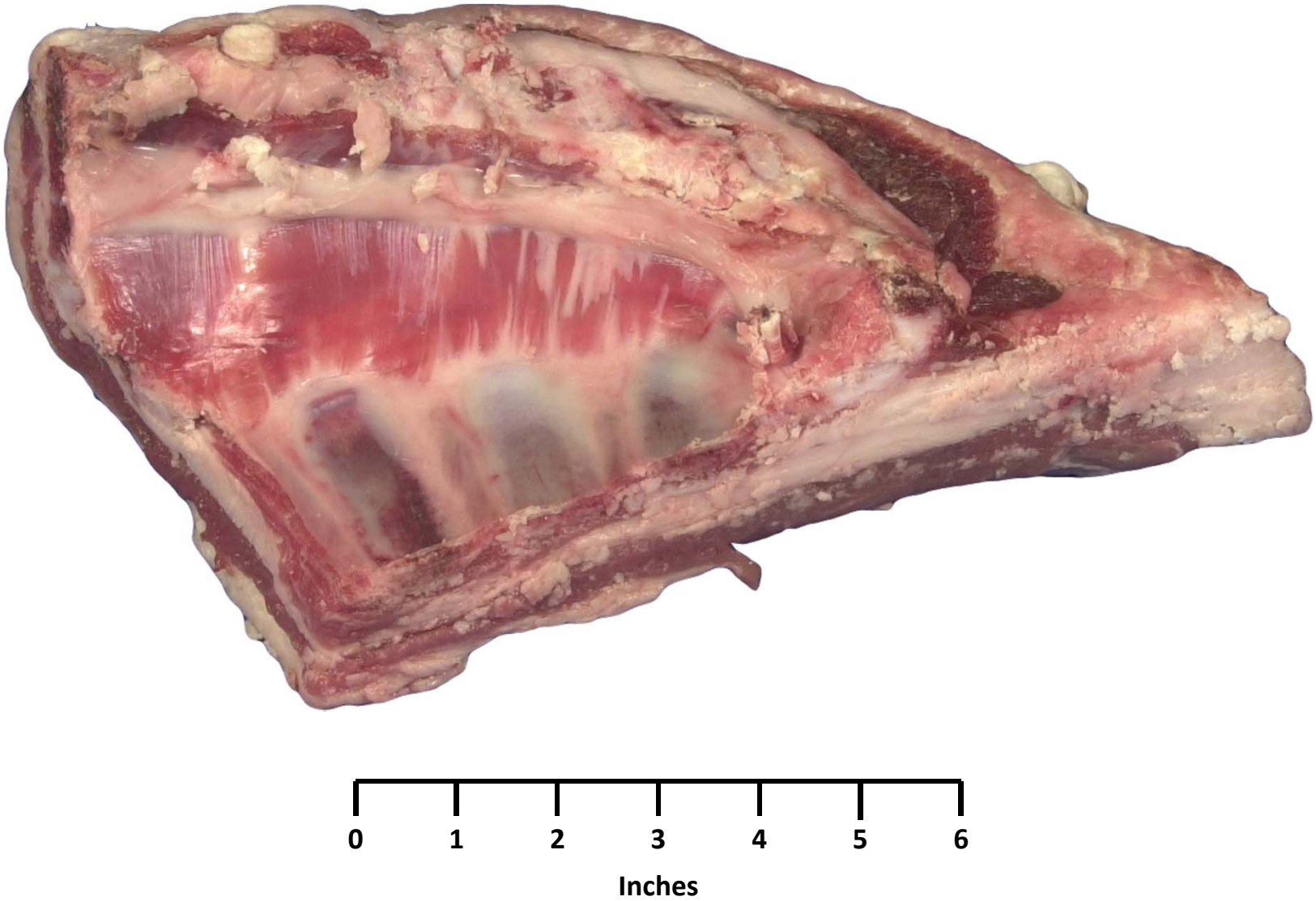
66. Fresh ham center slice
67. Fresh ham rump portion
68. Fresh ham shank portion
69. Fresh side pork
70. Blade chop
71. Blade roast
72. Butterfly chop
73. Center rib roast
74. Center loin roast
75. Loin chop
76. Rib chop
77. Sirloin chop
78. Top loin chop
79. Arm picnic roast
80. Arm roast
81. Arm steak
82. Blade Boston roast
83. Sliced bacon
84. Smoked jowl
85. Smoked Canadian Style Bacon

Species of Cut – to be used in answer column 2 by Intermediates

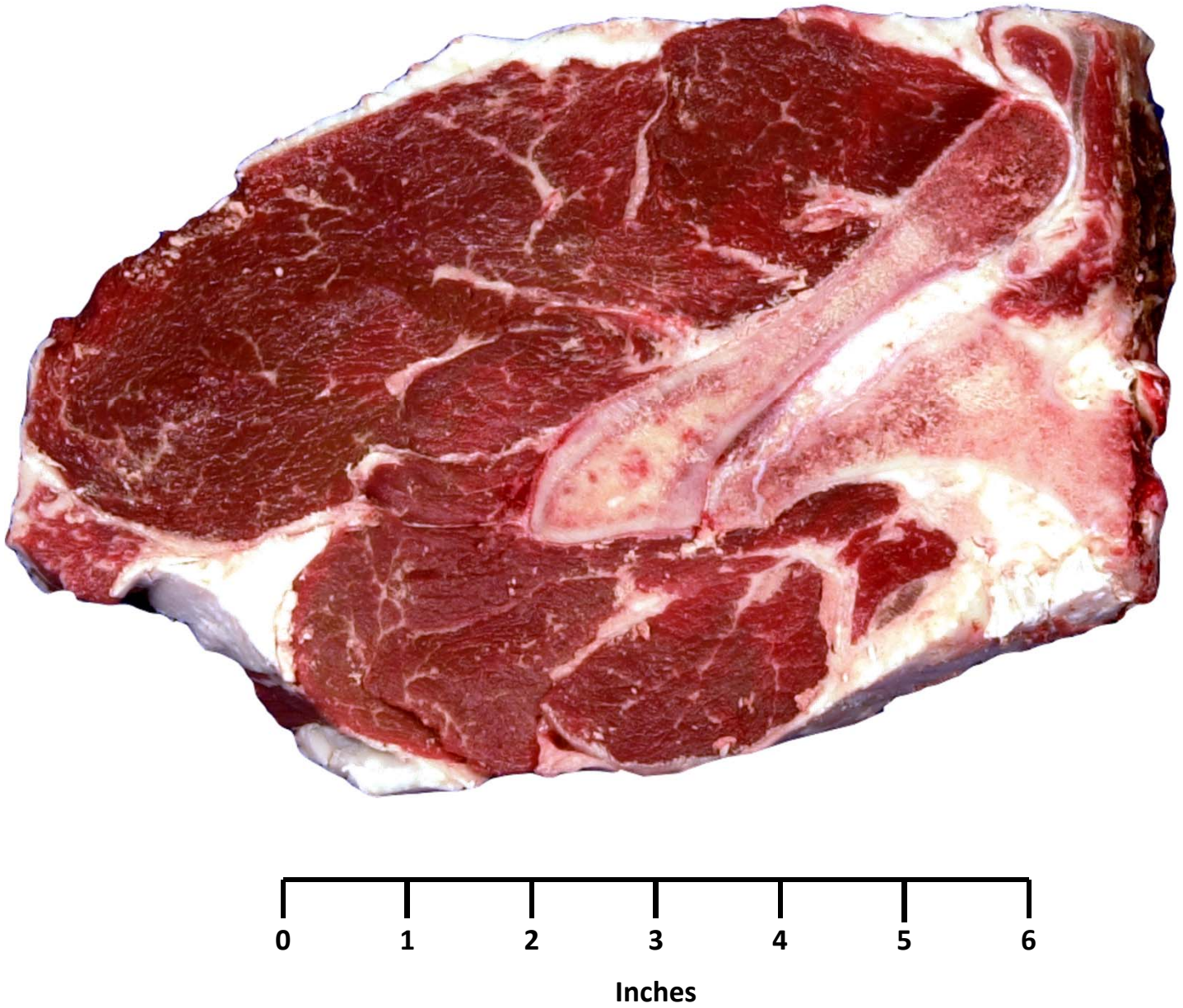
(You may use the letter more than once!!)

B. Beef L. Lamb P. Pork

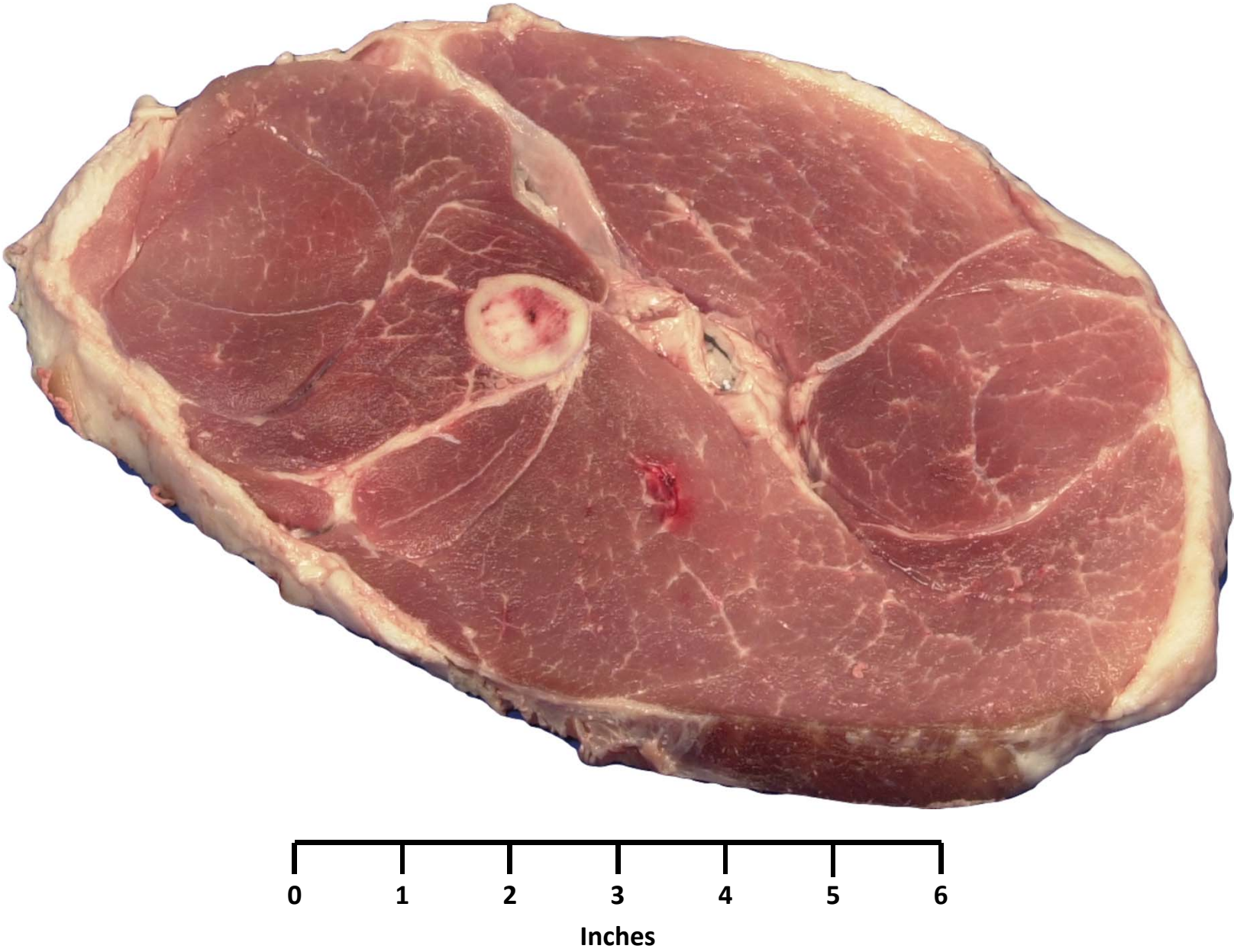
1



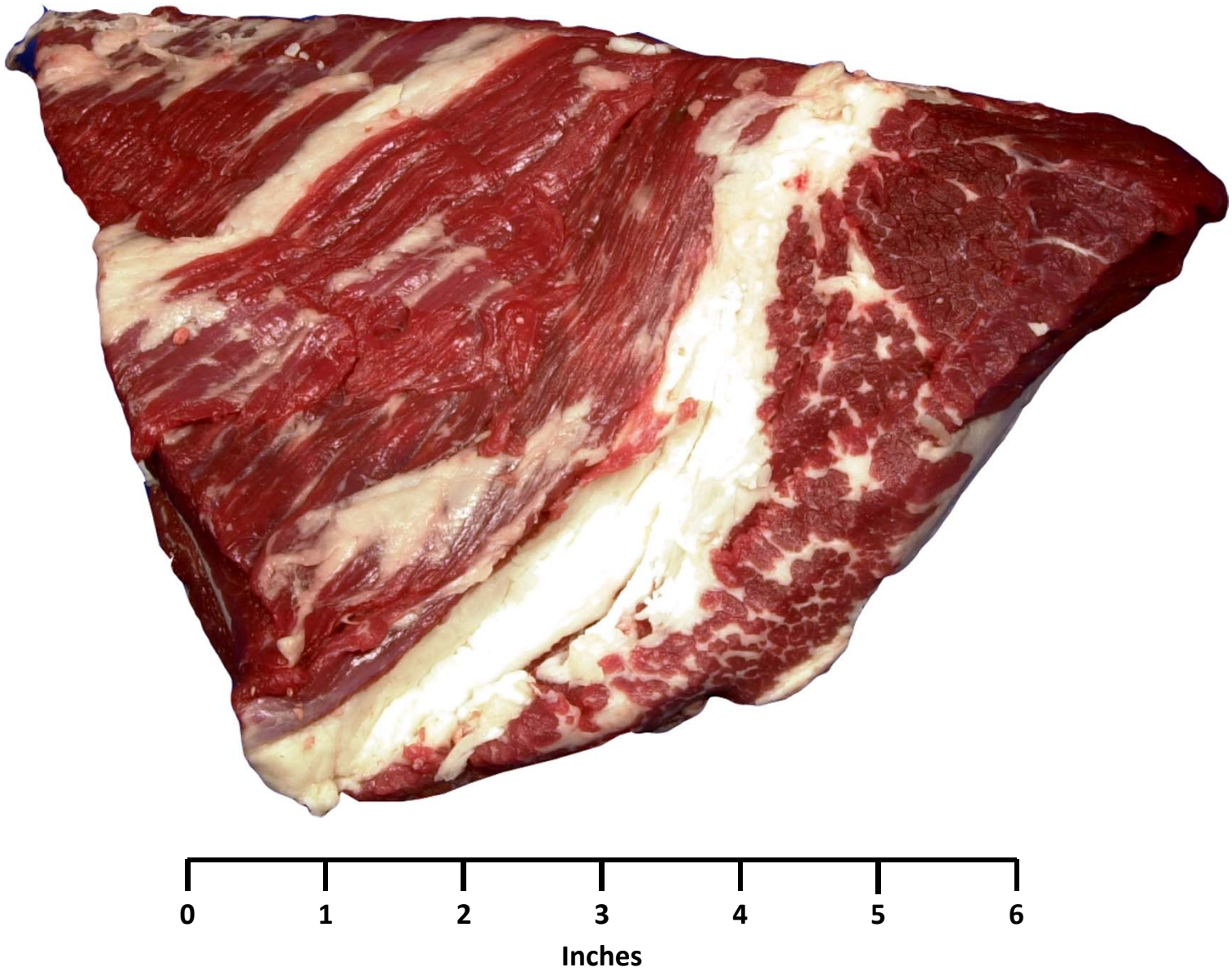
2



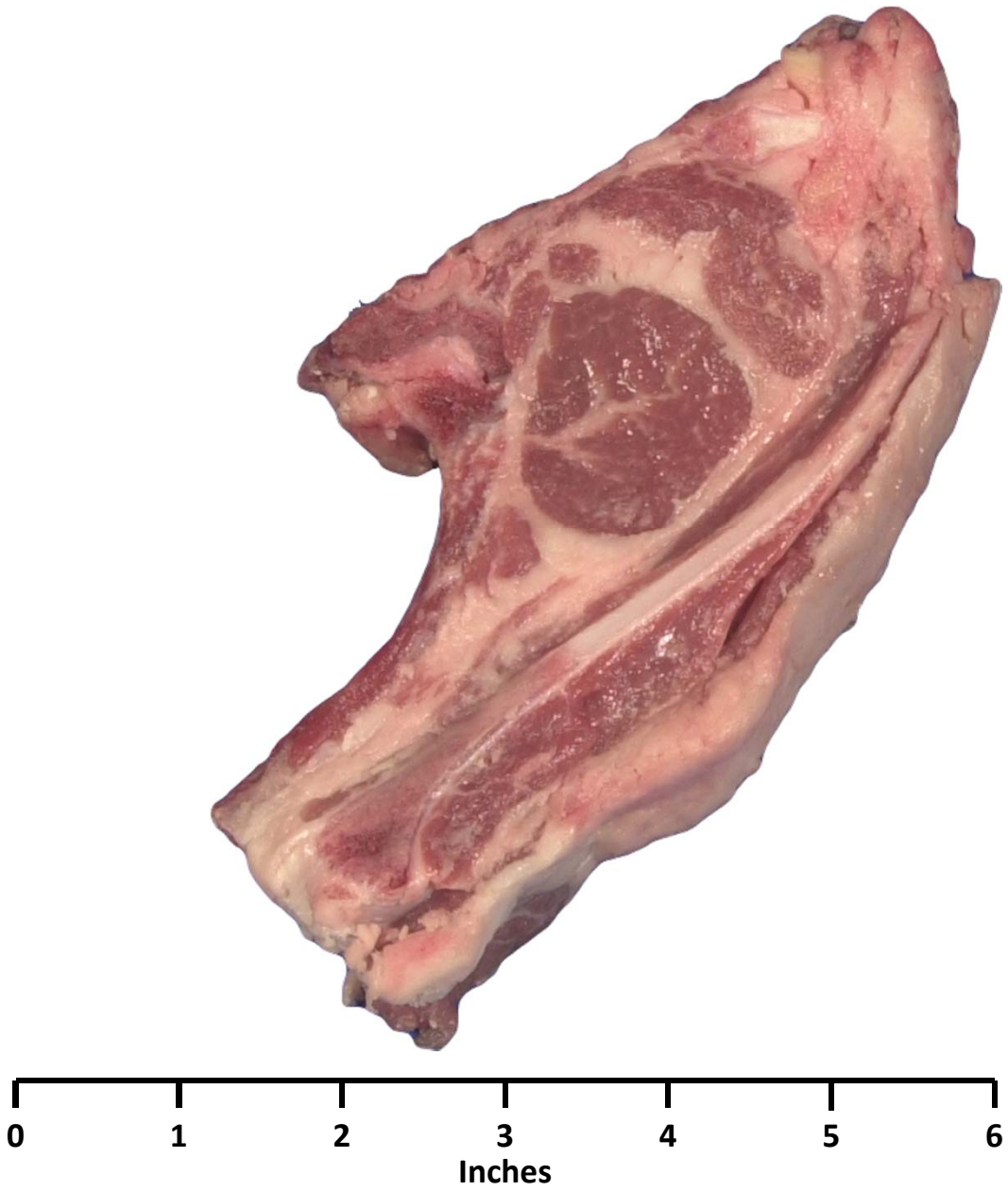
3



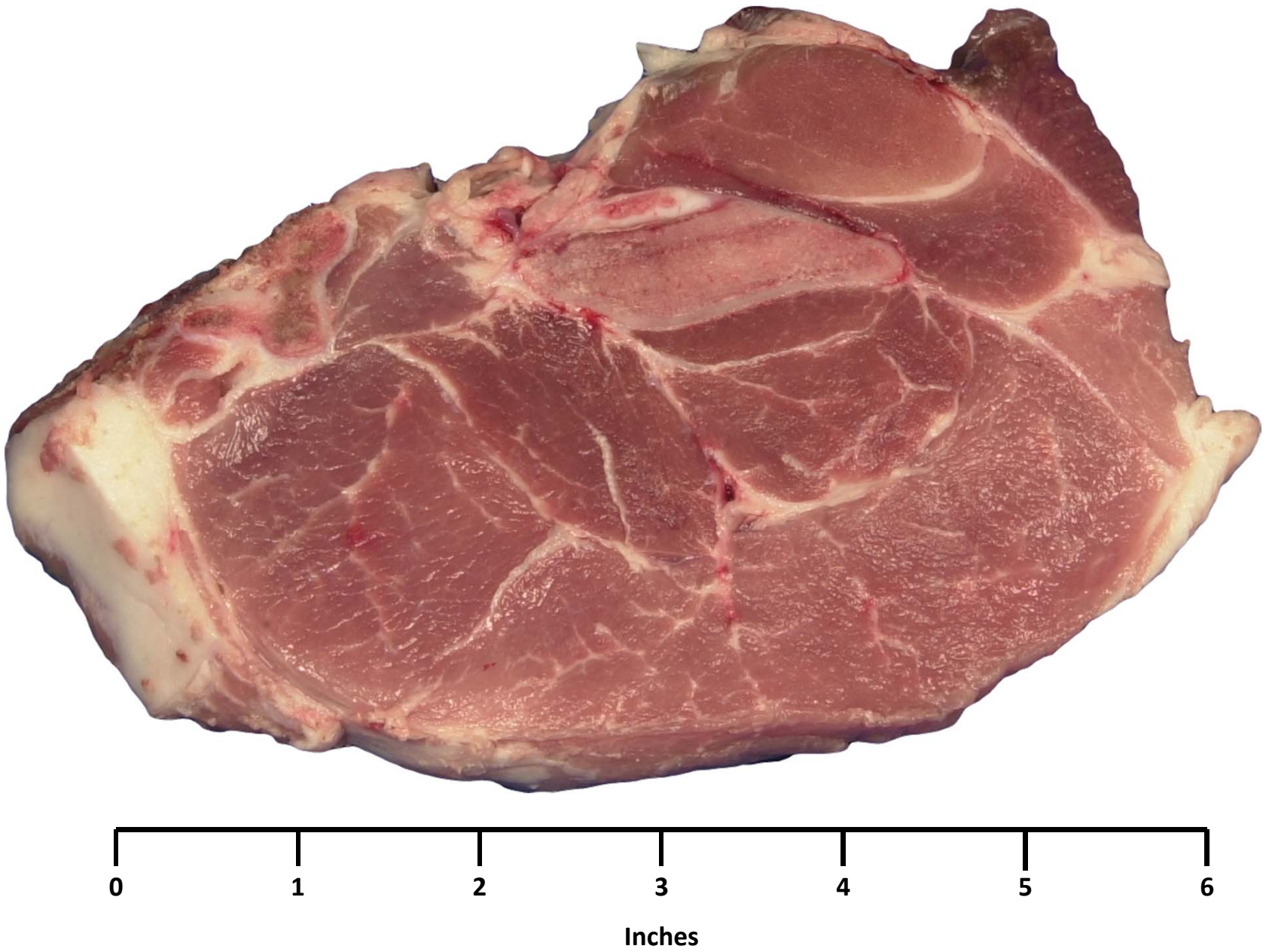
4



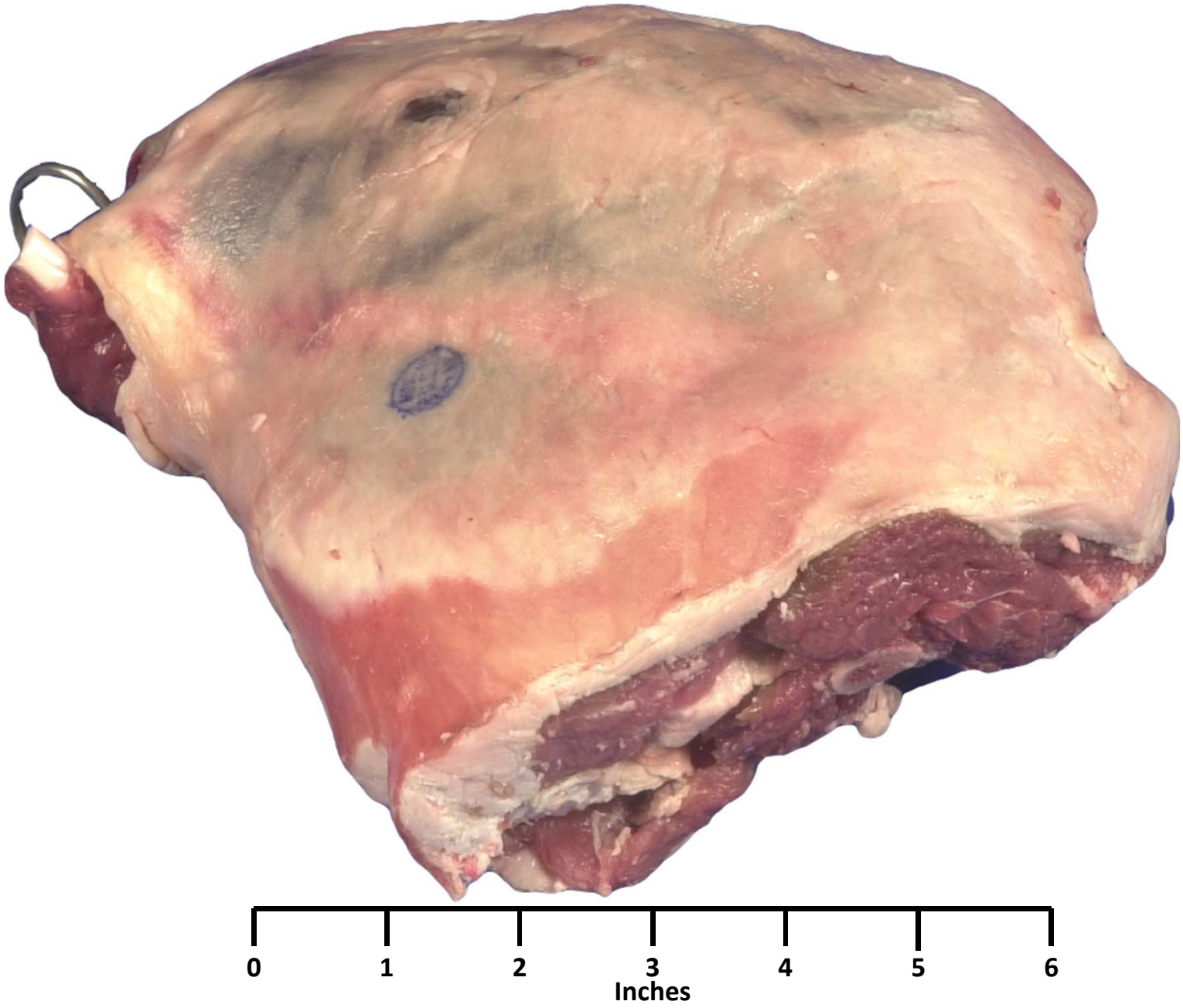
5



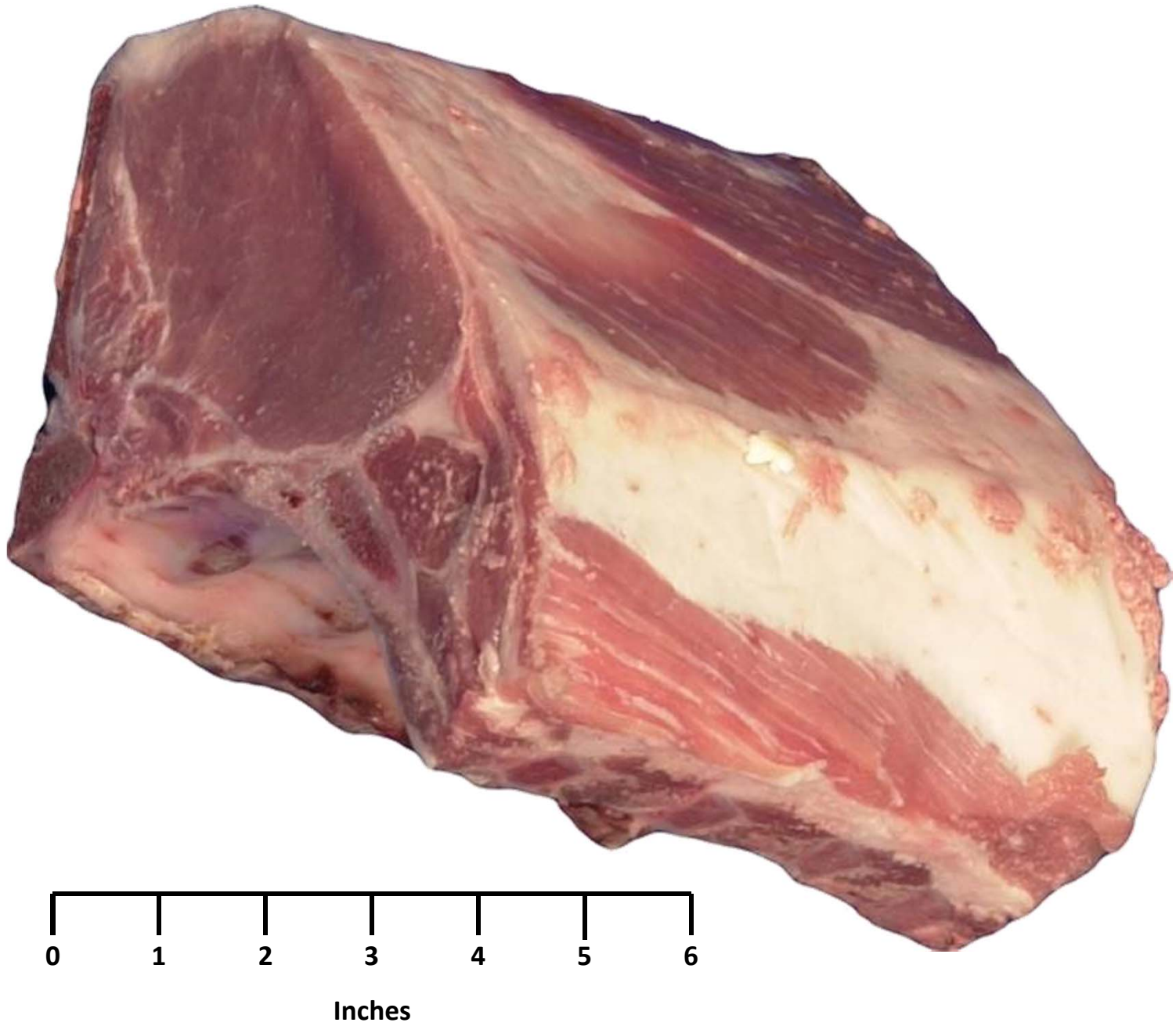
6



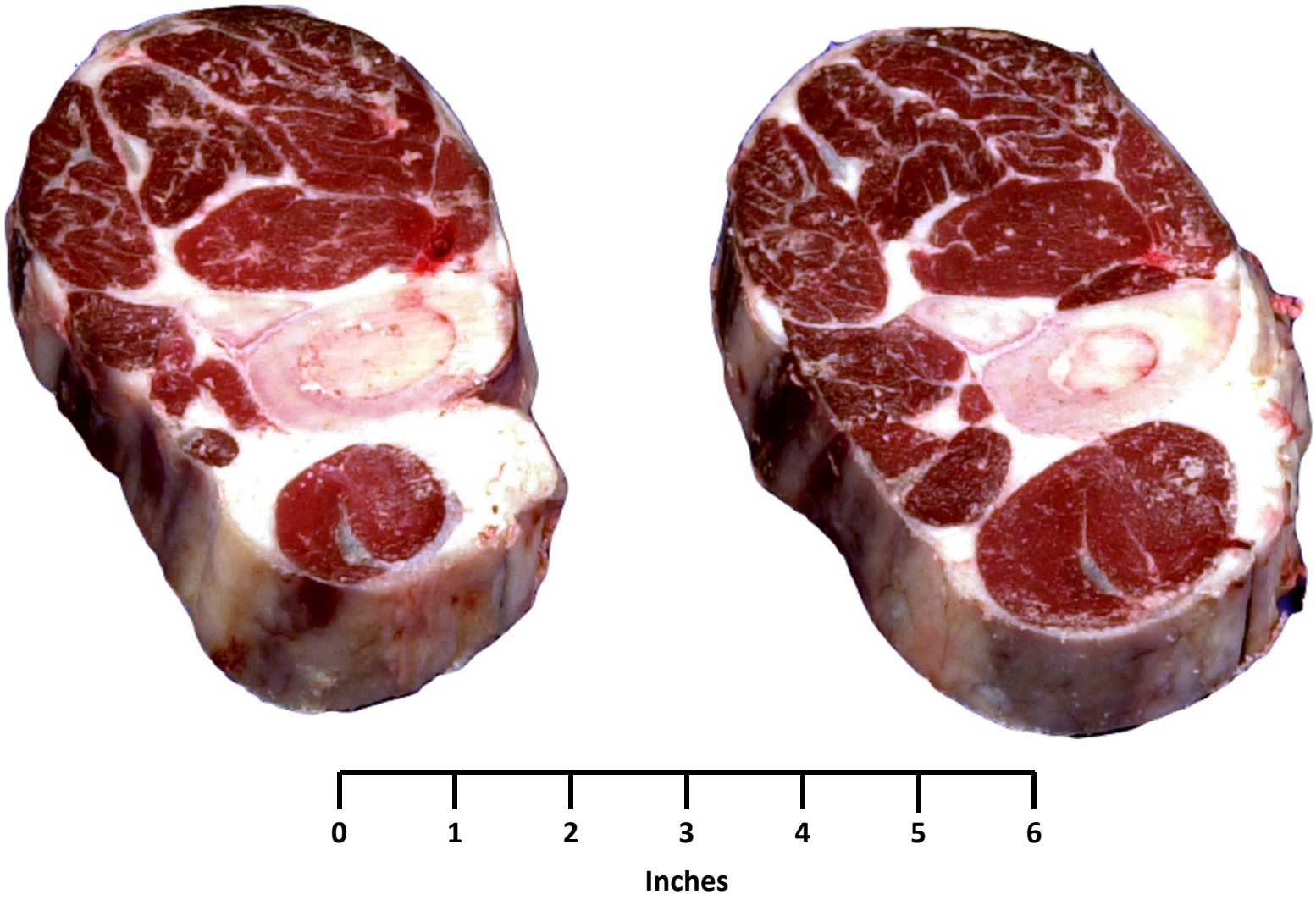
7



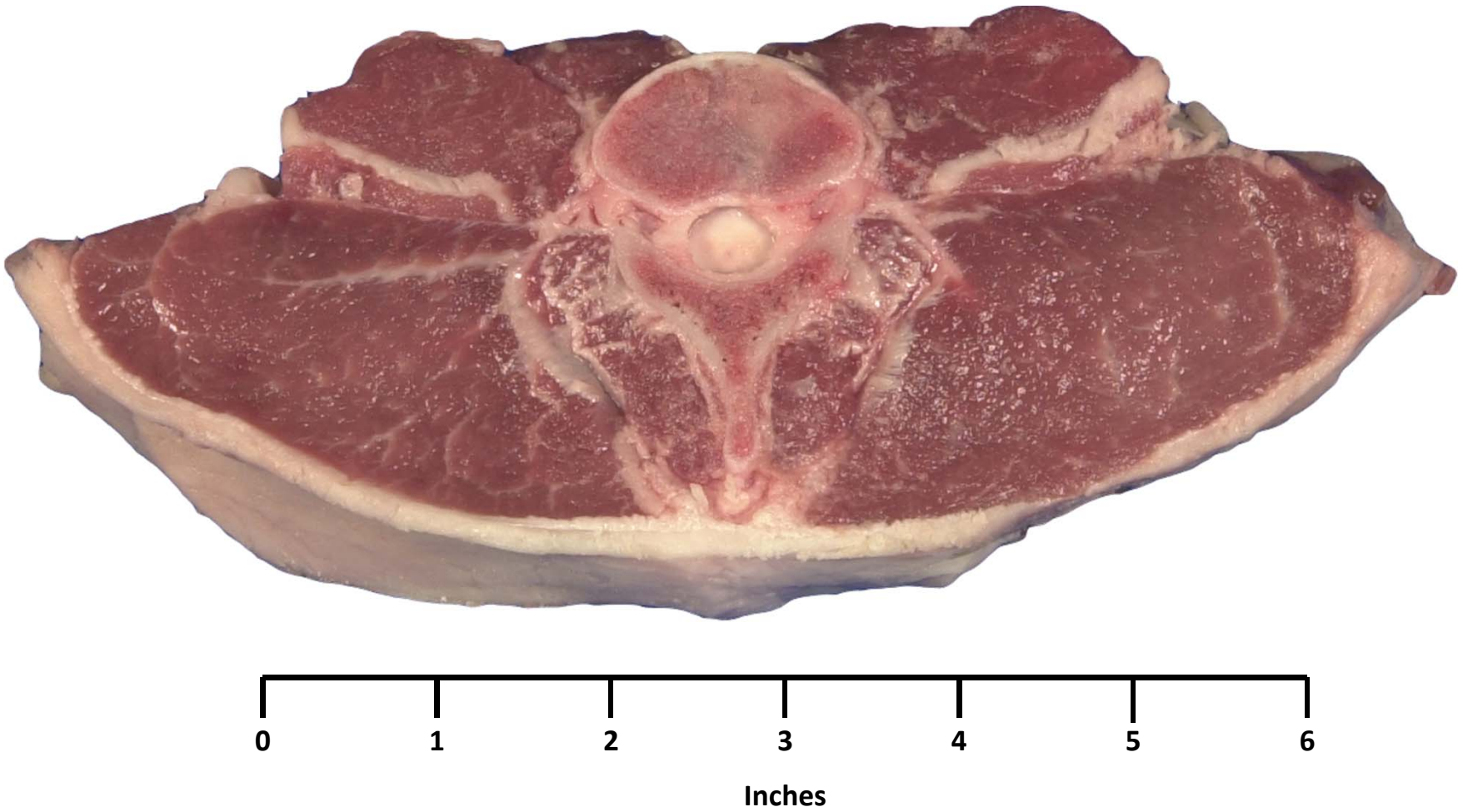
8



9



10



Name_____ANSWER KEY_____ Contestant #_____County_____

Intermediate Livestock Feed Identification-2013

INSTRUCTIONS: For each sample, use the columns on the right to choose the number or letter that indicates your answer for each livestock feedstuff. Use capital letters and write neatly. **Intermediates** provide answers for feedstuff name and nutrient group. Each question is worth 5 points (100 points total for Intermediates).

	Feedstuff Name	Nutrient Group
1.	18	M
2.	3	C
3.	12	P
4.	20	B
5.	37	C
6.	2	P or M or V
7.	52	P or F
8.	15	C
9.	42	P
10.	71	C

Feed Names – to be used in answer column 1 by Intermediates

1. Alfalfa cubes
2. Alfalfa meal (dehydrated)
3. Barley (whole)
4. Blood meal
5. Brewers dried grain
6. Canola meal
7. Copper sulfate
8. Corn distillers dried grain
9. Corn distillers dried grain with soluble
10. Corn gluten feed
11. Corn gluten meal
12. Cottonseed (whole)
13. Cottonseed hulls
14. Cottonseed meal
15. Cracked shelled corn
16. Crimped oats
17. Defluorinated rock phosphate
18. Dicalcium phosphate
19. DL-methionine
20. Dried Beet pulp
21. Dried molasses
22. Dried skim milk
23. Feather meal
24. Fish meal
25. Grain sorghum (whole)
26. Ground ear corn
27. Ground limestone
28. Ground shelled corn
29. Kentucky Bluegrass pasture
30. L-lysine HCl
31. L-threonine
32. L-tryptophan
33. Linseed meal
34. Liquid molasses
35. Meat and bone meal
36. Millet (whole)
37. Oats (whole)
38. Oat hulls
39. Orchardgrass hay
40. Orchardgrass pasture
41. Oyster shells
42. Peanut meal
43. Red Clover hay
44. Red Clover pasture
45. Roller dried whey
46. Rye (whole)
47. Salt, white
48. Santoquin
49. Shelled corn
50. Soybean hulls
51. Soybean meal
52. Soybeans (whole)
53. Spray-dried animal plasma
54. Spray-dried whey
55. Steam flaked corn
56. Steam rolled barley
57. Steam rolled oats
58. Steamed bone meal
59. Sunflower meal
60. Tall Fescue hay
61. Tall Fescue pasture
62. Timothy hay
63. Timothy pasture
64. Trace-mineral premix
65. Trace-mineralized salt
66. Triticale (whole)
67. Tryptosine
68. Urea
69. Vegetable oil
70. Vitamin premix
71. Wheat (whole)
72. Wheat bran
73. Wheat middlings
74. White Clover hay
75. White Clover pasture

Feeds Nutrient Groups – to be used in answer column 2 by Intermediates

(You may use the letter more than once!!)

B. By-product feed
C. Carbohydrate (energy)
F. Fats (energy)
M. Mineral
P. Protein
V. Vitamin

Name____ANSWER KEY_____ Contestant #_____County_____

Intermediate Livestock Breeds Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each livestock breed. Use capital letters and write neatly. **Intermediates** provide answers for breed name and origin of breed. Each question is worth 5 points (100 points total for Intermediates).

	Breed Name	Origin of Breed
1.	16	L
2.	33	A
3.	53	C
4.	9	K
5.	26	I
6.	52	H
7.	32	B
8.	17	F
9.	44	D
10.	8	E

Breed Names – to be used in answer column 1 by Intermediates

Beef Breeds	Goat Breeds	Sheep Breeds	Swine Breeds
1. Angus	17. Alpine	30. Cheviot	47. Berkshire
2. Brahman	18. American Cashmere	31. Columbia	48. Chester White
3. Brangus	19. Angora	32. Corriedale	49. Duroc
4. Charolais	20. Boer	33. Dorper	50. Hampshire
5. Chianina	21. Kiko	34. Dorset	51. Hereford
6. Gelbvieh	22. Lamancha	35. Finnsheep	52. Landrace
7. Hereford	23. Nubian	36. Hampshire	53. Pietrain
8. Limousin	24. Oberhasli	37. Katahdin	54. Poland China
9. Maine Anjou	25. Pygmy	38. Merino	55. Spotted
10. Polled Hereford	26. Saanen	39. Montadale	56. Tamworth
11. Red Angus	27. Spanish	40. Oxford	57. Yorkshire
12. Red Poll	28. Tennessee Fainting	41. Polled Dorset	
13. Santa Gertrudis	29. Toggenburg	42. Rambouillet	
14. Shorthorn		43. Romney	
15. Simmental		44. Southdown	
16. Tarentaise		45. Suffolk	
		46. White Dorper	

Origins of Breeds – to be used in answer column 2 by Intermediates

A. South Africa

B. New Zealand and Australia

C. Pietrain, Belgium

D. Sussex, England

E. Limousin and Marche regions of France

F. Alps of Switzerland

G. Putnam & Hendricks Counties in Indiana

H. Descendants of the Danish Landrace

I. Saanen vally of Switzerland

J. Herefordshire, England

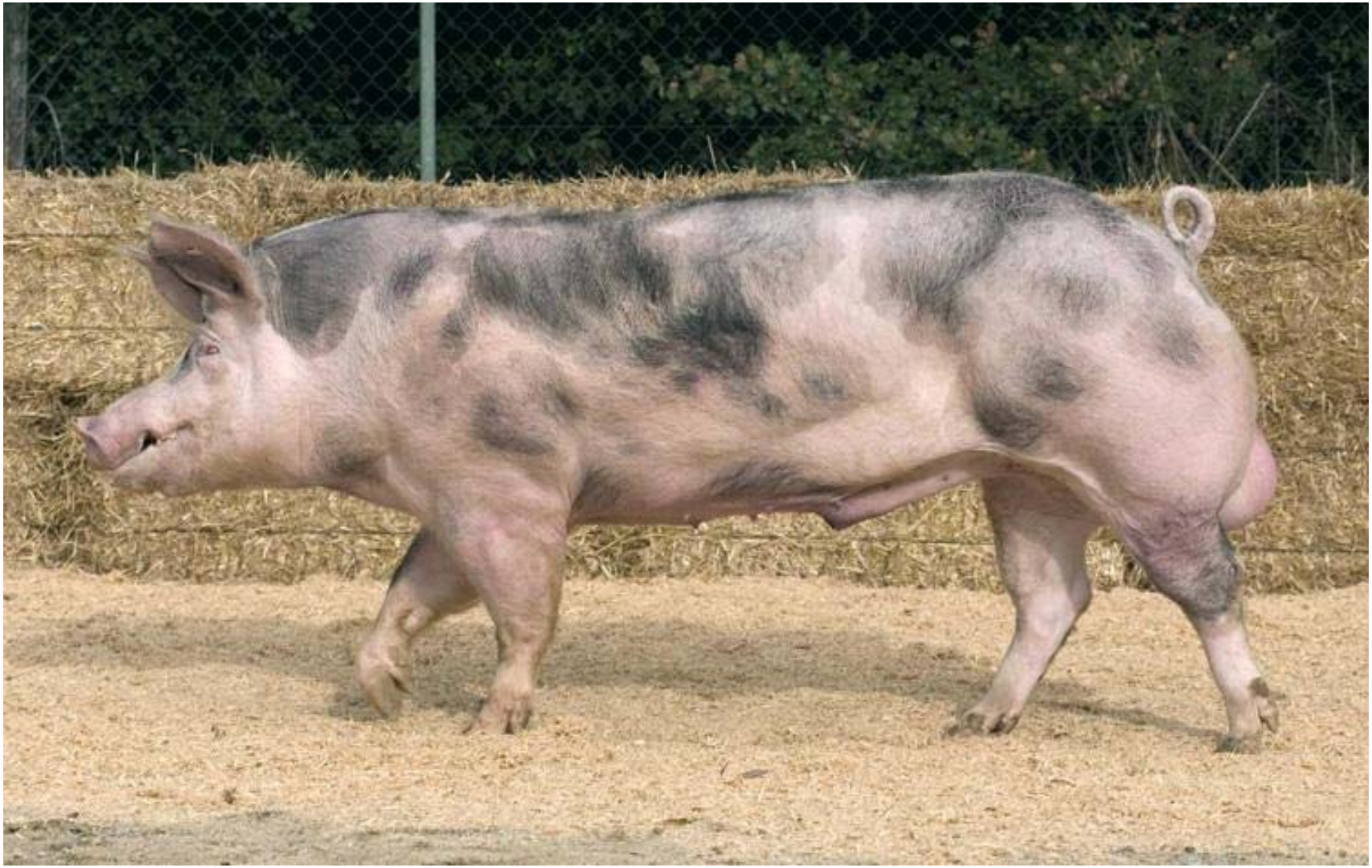
K. Maine and Anjou river valleys in France

L. Tarentaise valley of France

1

2

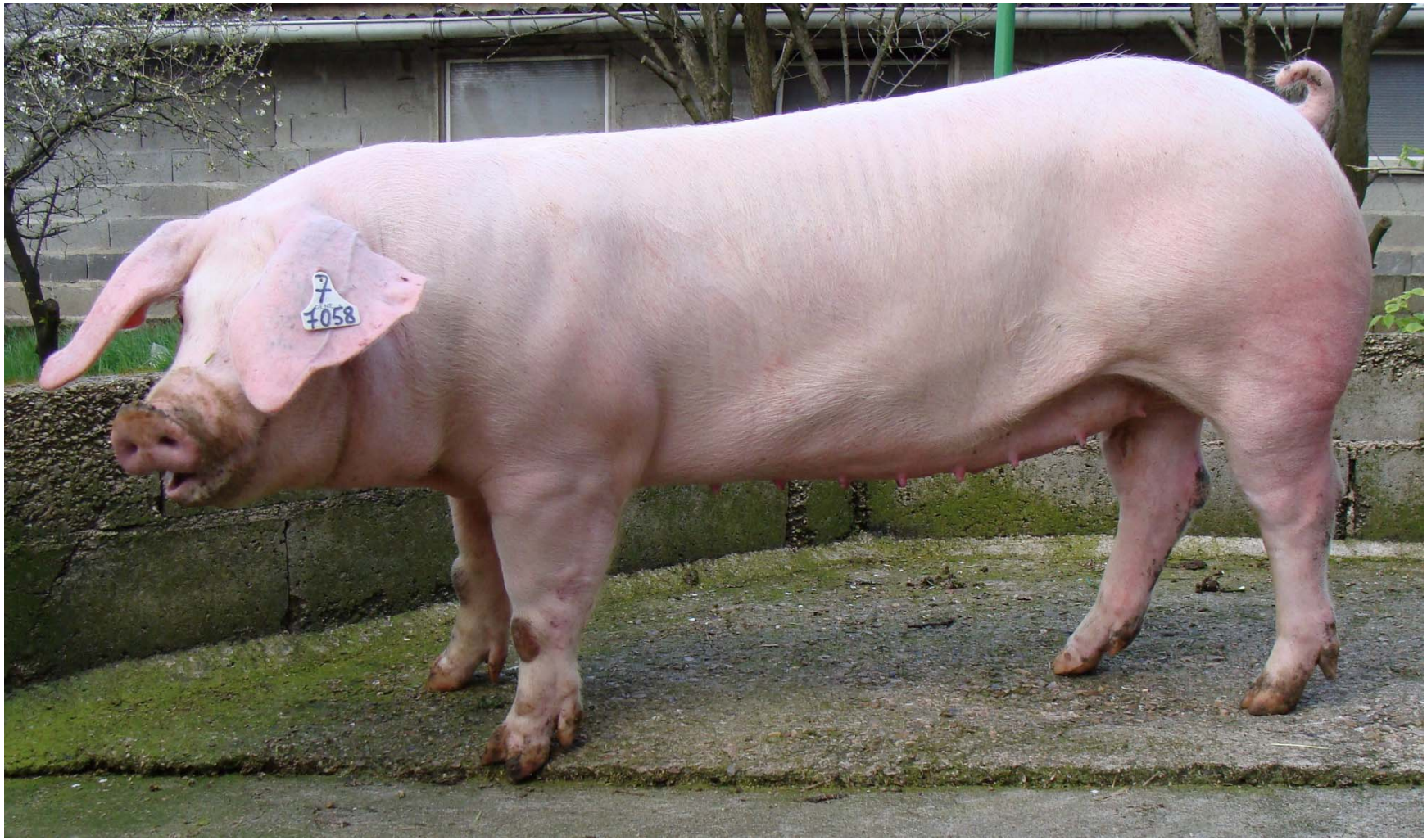
3



4

5

6



7

8

9

10

Name___ANSWER KEY___ Contestant #_____County_____

Intermediate Livestock and Meat Equipment Identification – 2014

INSTRUCTIONS: For each picture, use the columns on the right to choose the number or letter that indicates your answer for each piece of equipment. Use capital letters and write neatly. **Intermediates** provide answers for livestock/meat equipment names and equipment use. Each question is worth 5 points (100 points total for Intermediates).

	Equipment Name	Equipment Use
1.	36	N
2.	33	I
3.	14	E
4.	47	C
5.	20	G
6.	39	Q
7.	4	H
8.	16	O
9.	61	M
10.	19	L

Equipment Names – to be used in answer column 1 by Intermediates

Livestock Equipment

1. All-in-one castrator/docker
2. Artificial insemination pipettes (Swine)
3. Bowl waterer
4. Balling gun
5. Barnes dehorner
6. Cattle clippers
7. Clipper comb
8. Clipper cutter
9. Currycomb
10. Disposable syringes
11. Drench gun
12. Ear notchers
13. Ear tag
14. Elastrator
15. Electric branding iron
16. Electric docker
17. Electric fence wire roller
18. Electric sheep shears
19. Emasculatome (Burdizzo)
20. Ewe prolapse retainer
21. Fencing pliers
22. Foot rot shears
23. Freeze branding iron
24. Hanging Scale
25. Hand sheep shears
26. Lamb tube feeder
27. Needle teeth nippers
28. Nipple waterer
29. Nose ring
30. Nose ring pliers
31. Obstetrical (O.B.) chain
32. Plastic Sleeve
33. Ralgro pellet injector
34. Ram marking harness
35. Rumen magnate
36. Scotch Comb
37. Slap tattoo
38. SYNOVEX Implant cartridge
39. SYNOVEX Implant gun
40. Syringe Needles
41. Tattoo pliers
42. Wood post electric fence insulator

Meat Equipment

43. Backfat ruler
44. Band saw
45. Bone dust scraper
46. Boning knife
47. Bowl chopper
48. Dehairing machine
49. Electrical stunner
50. Emulsifier
51. Ham net
52. Hand saw
53. Hard hat
54. Loin eye area grid
55. Meat grinder
56. Meat grinder auger
57. Meat grinder knife
58. Meat grinder plate
59. Meat grinder stuffing rod
60. Meat hook
61. Meat tenderizer
62. Meat trolley
63. Metal knife scabbard
64. Rubber apron
65. Sharpening steel
66. Smoke house
67. Thermometer
68. Tumbler
69. Vacuum sausage stuffer
70. Whale saw

Equipment Uses – to be used in answer column 2 by Intermediates

A. Used to pick up meat pieces during fabrication.

B. A device placed on rams that shows when a ewe has been serviced.

C. Used to chop meat for sausages.

D. Used to cut up meat carcasses.

E. An instrument used for the bloodless castration (young male calves, lambs, and goats) and docking of tails (young lambs and goats). It is used to place a small rubber ring over the scrotum or tail to shut off circulation.

F. Used to shear and groom the wool from sheep. Blade lengths typically range from 3 to 6-½ inches.

G. An instrument used to control vaginal prolapse in ewes.

H. Used to administer various pills (medications) to cattle and horses. It is placed down the throat to administer the pills.

I. Used to inject a RALGRO pellet under the loose skin and above the cartilage on the back side of a beef calf's ear.

J. An automatic waterer used to provide clean, fresh water to pigs.

K. Used to remove dirt and loose hair from cattle when grooming.

L. An instrument used for the bloodless castration of young male calves, lambs, and goats by severing (crushing) the testicular cord.

M. Used to tenderize the less tender cuts of meat.

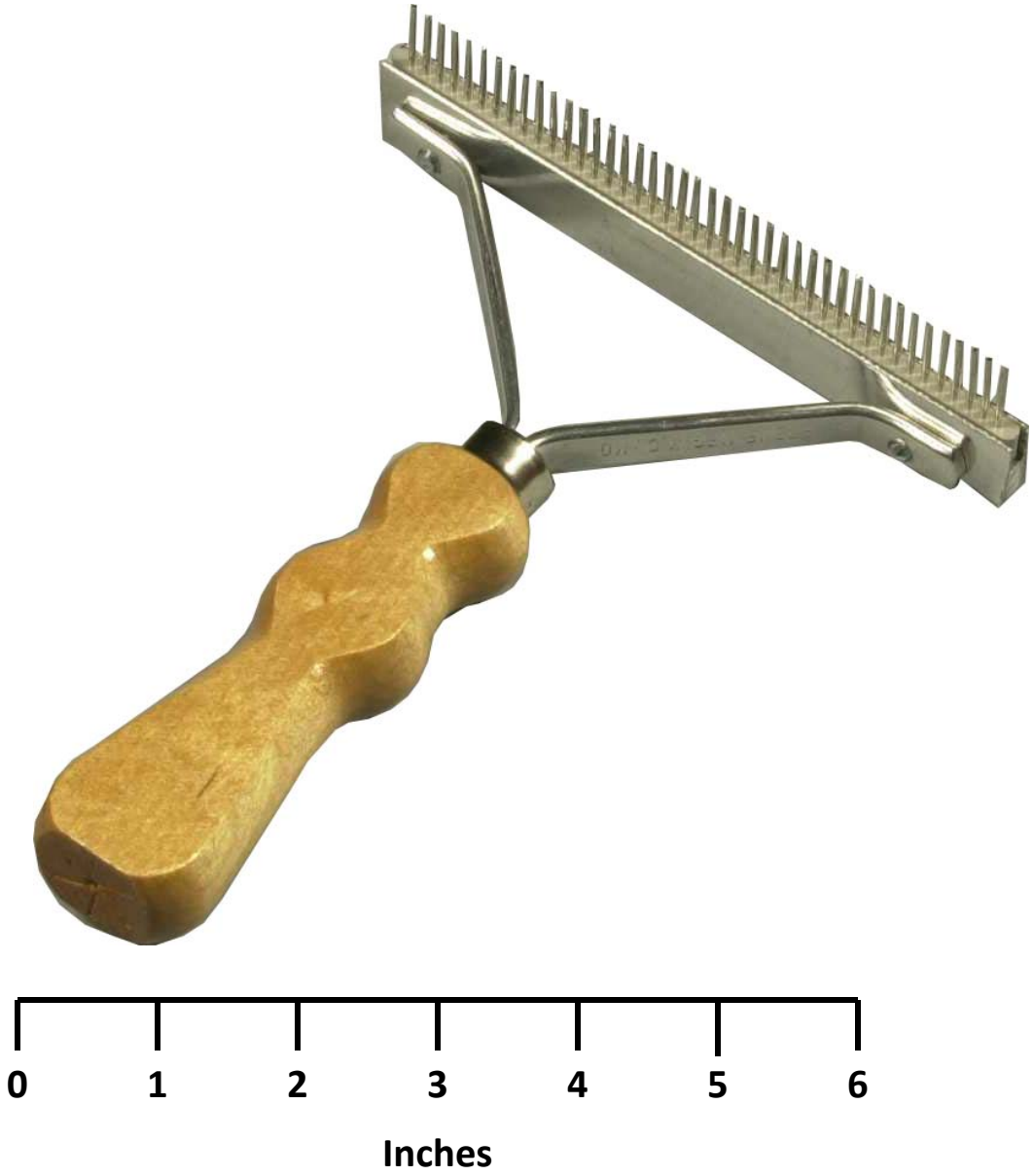
N. Used to comb (groom) the hair on cattle.

O. Used to dock the tails of lambs and piglets. It cauterizes as it cuts the tail to eliminate excessive bleeding.

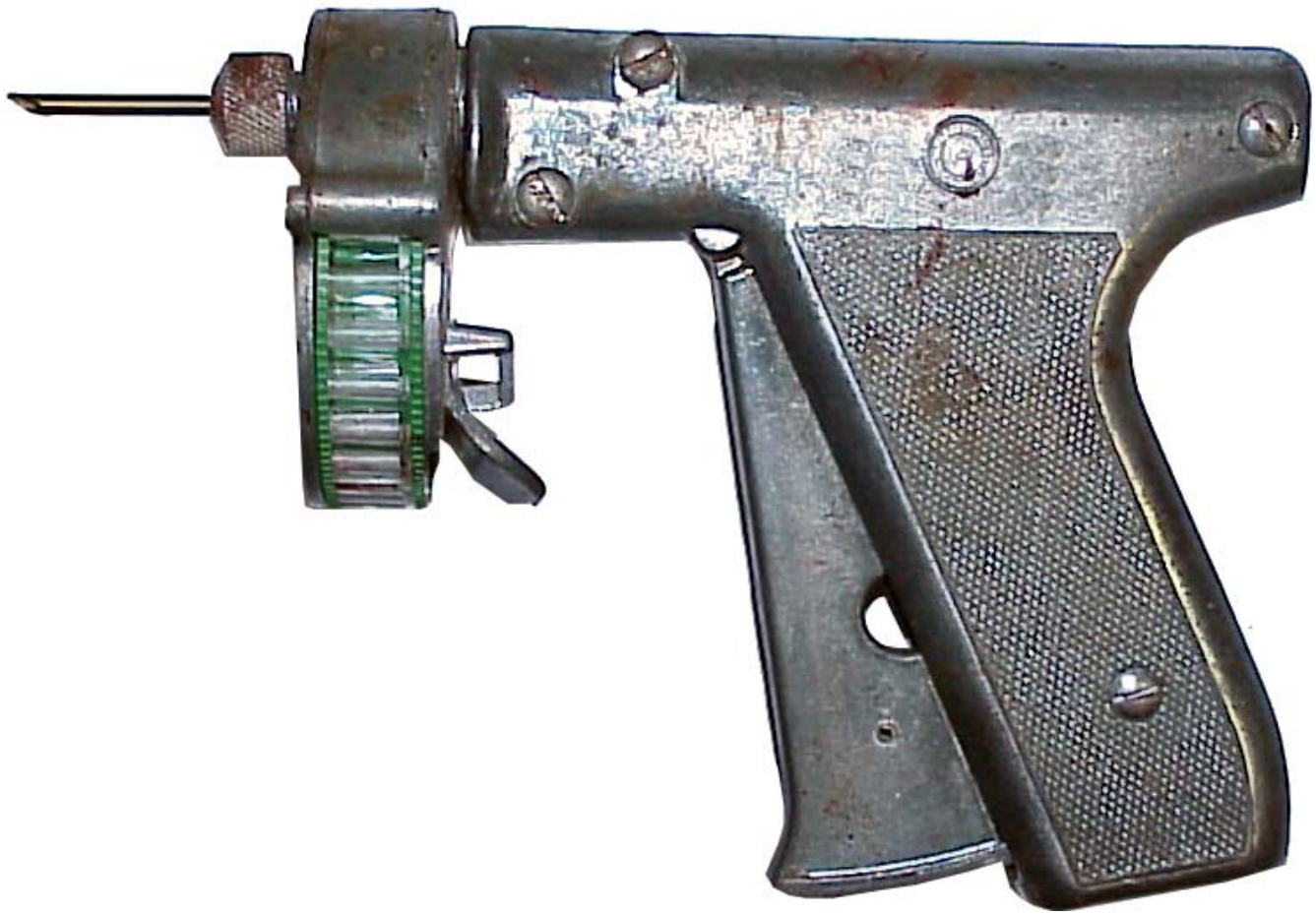
P. Used to trim hooves of cattle, sheep, and goats to help prevent foot diseases.

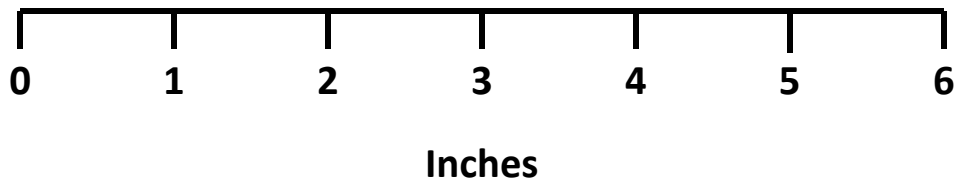
Q. Used to inject a SYNOVEX implant under the loose skin and above the cartilage on the back side of a beef calf's ear.

1

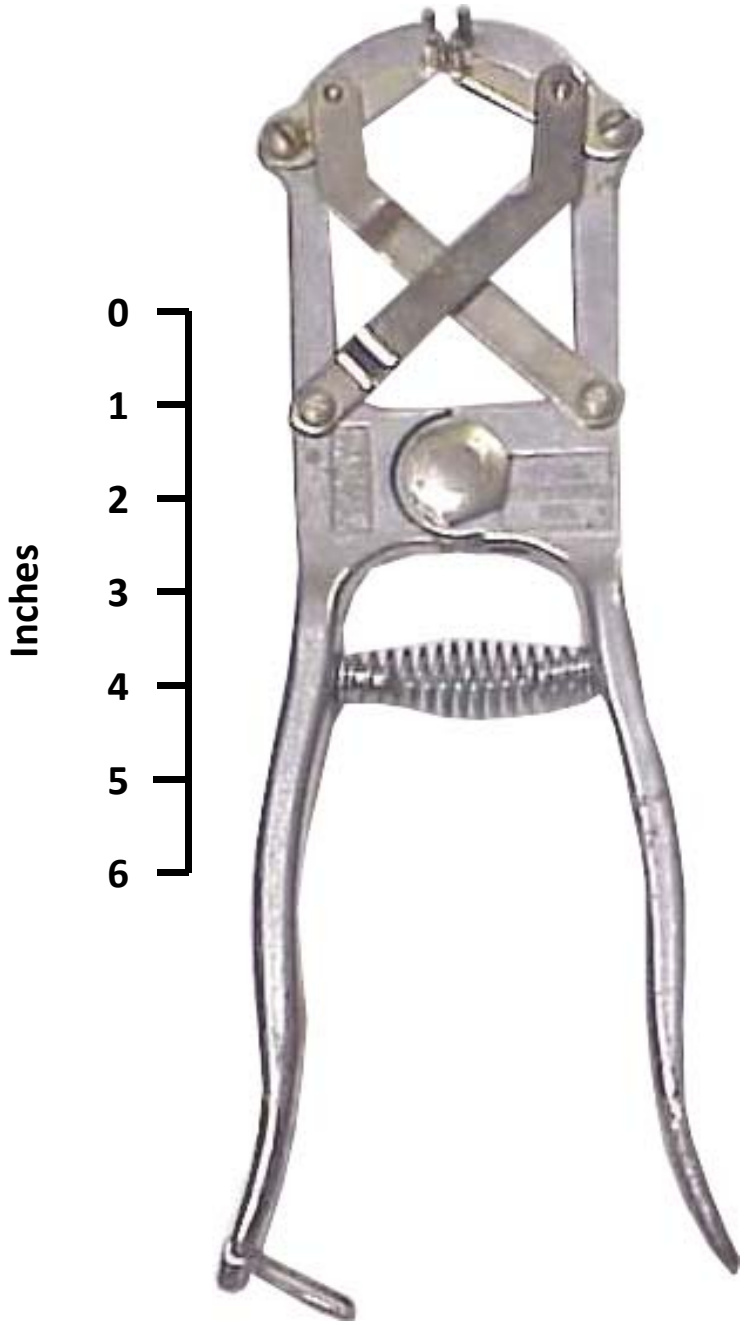


2

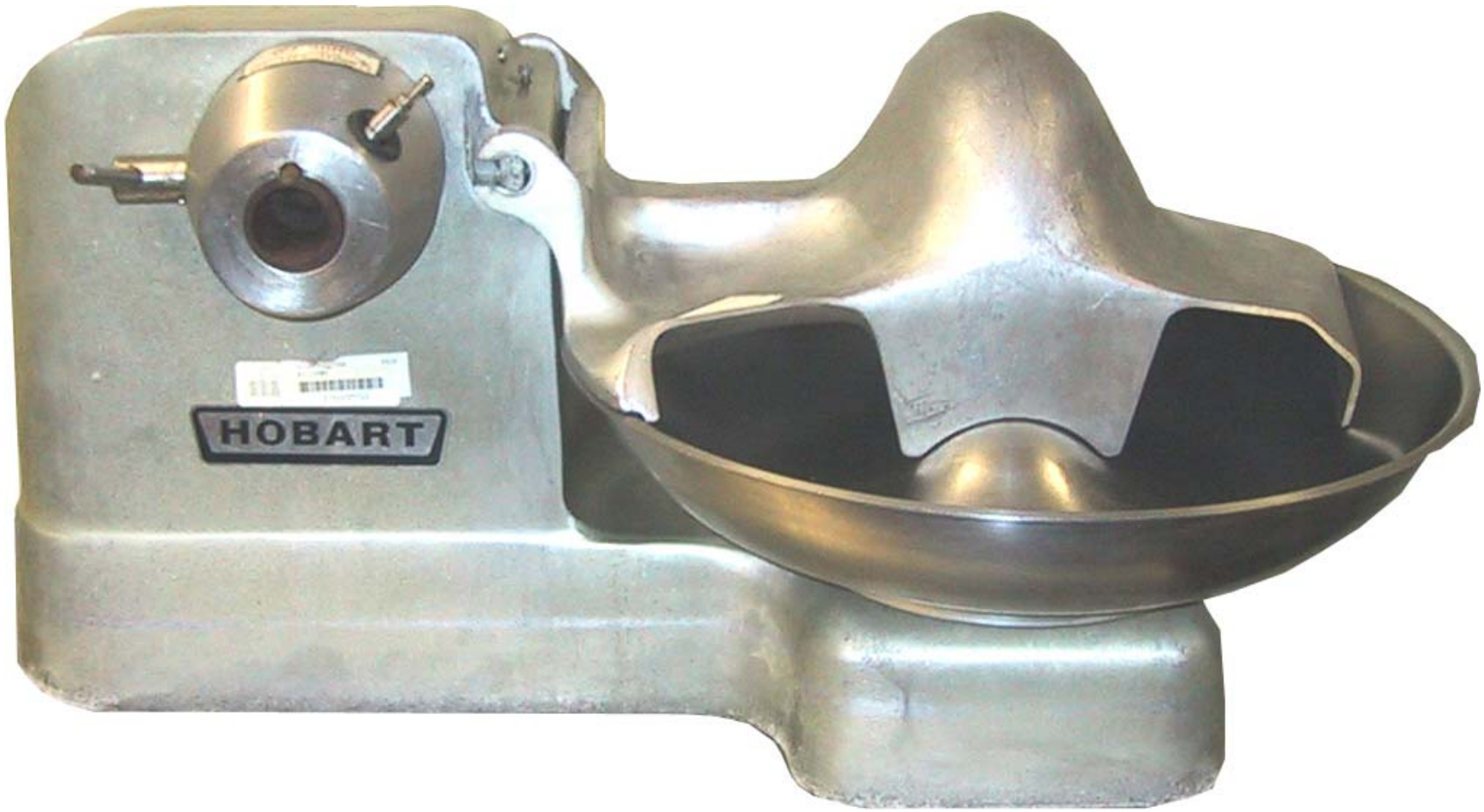




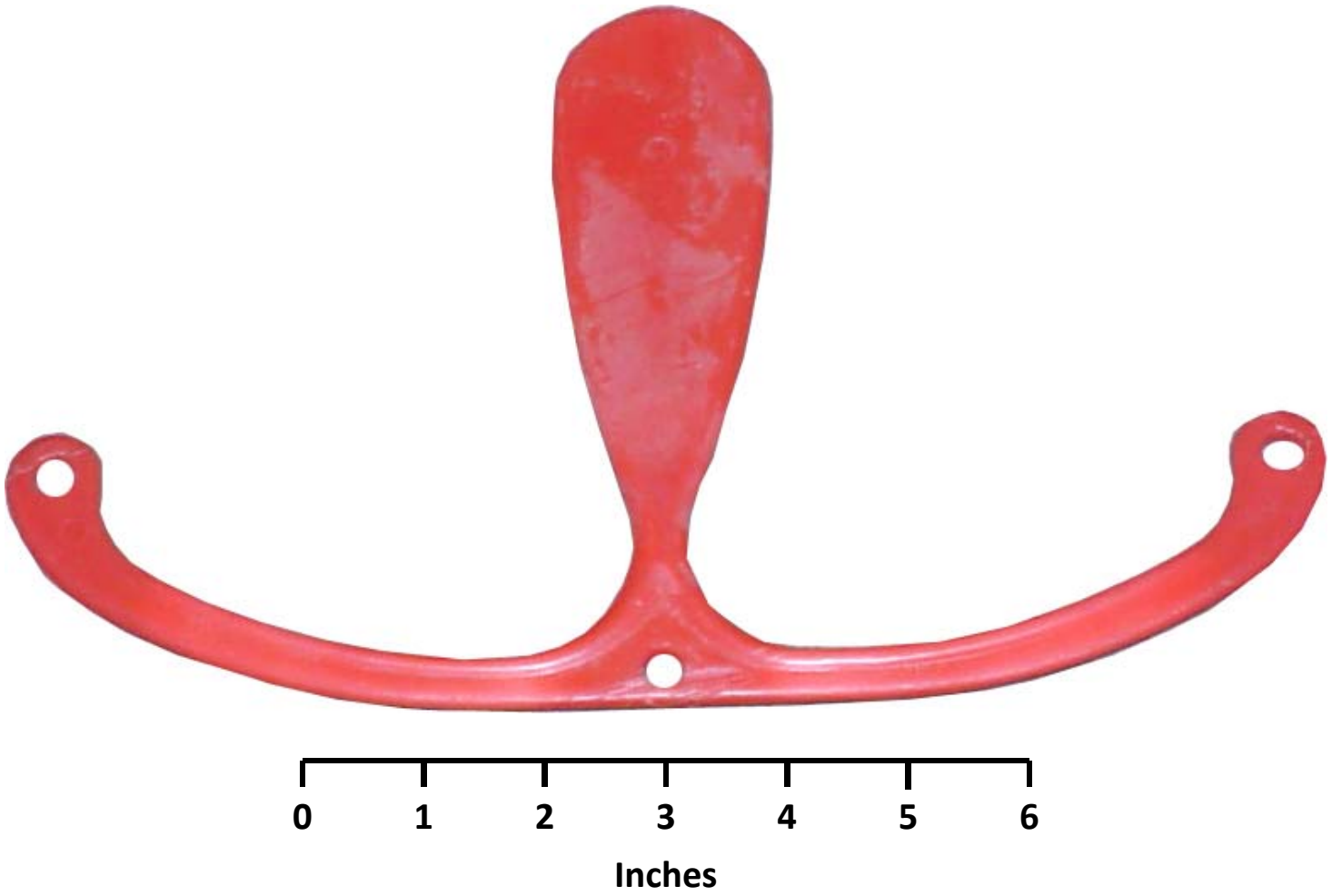
3



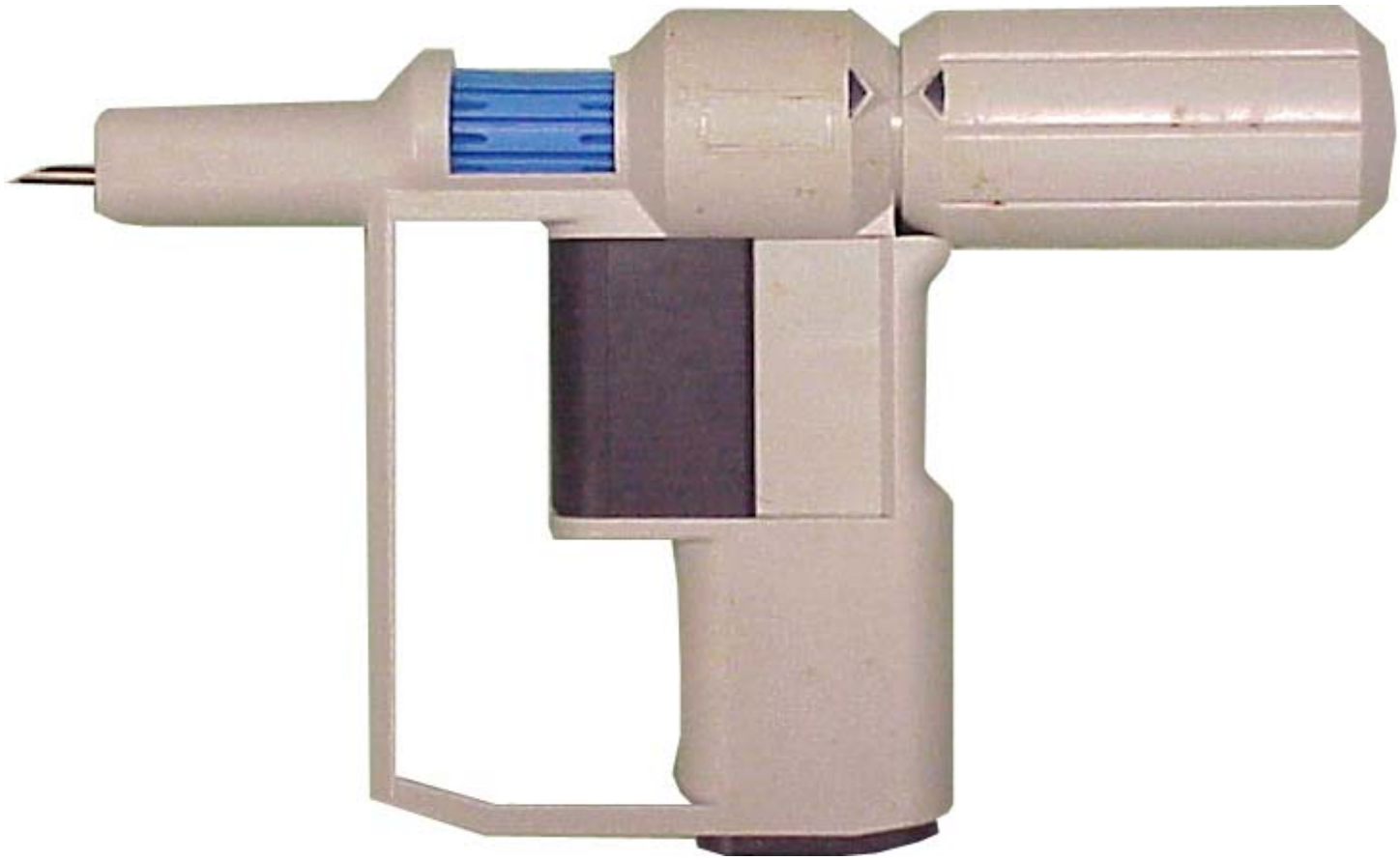
4

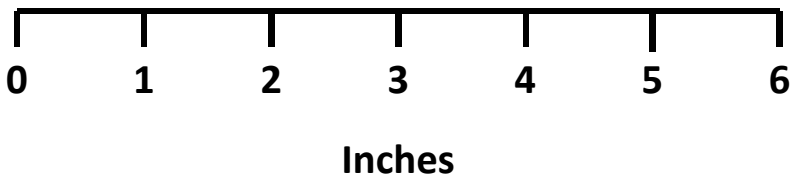


5

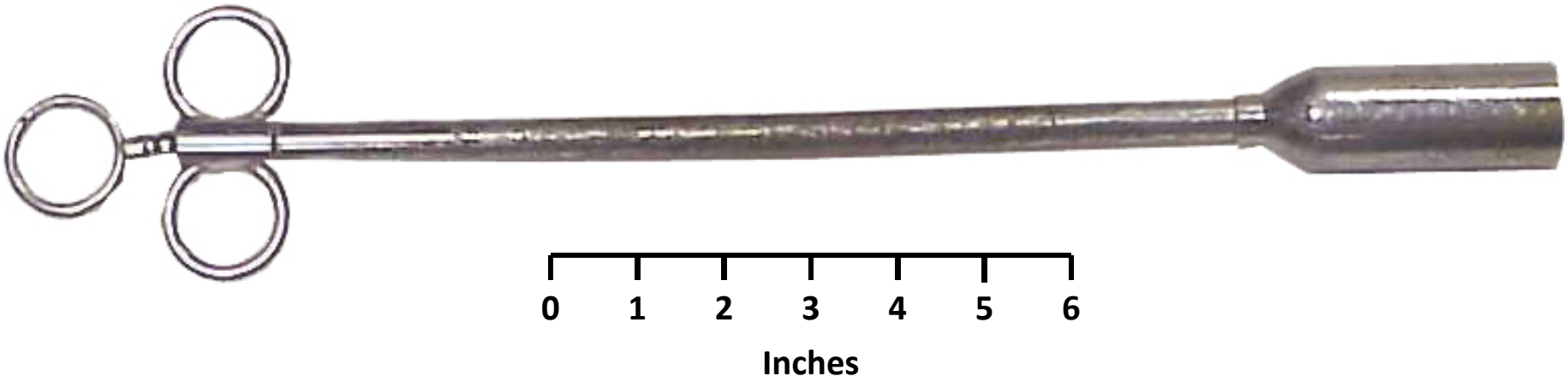


6

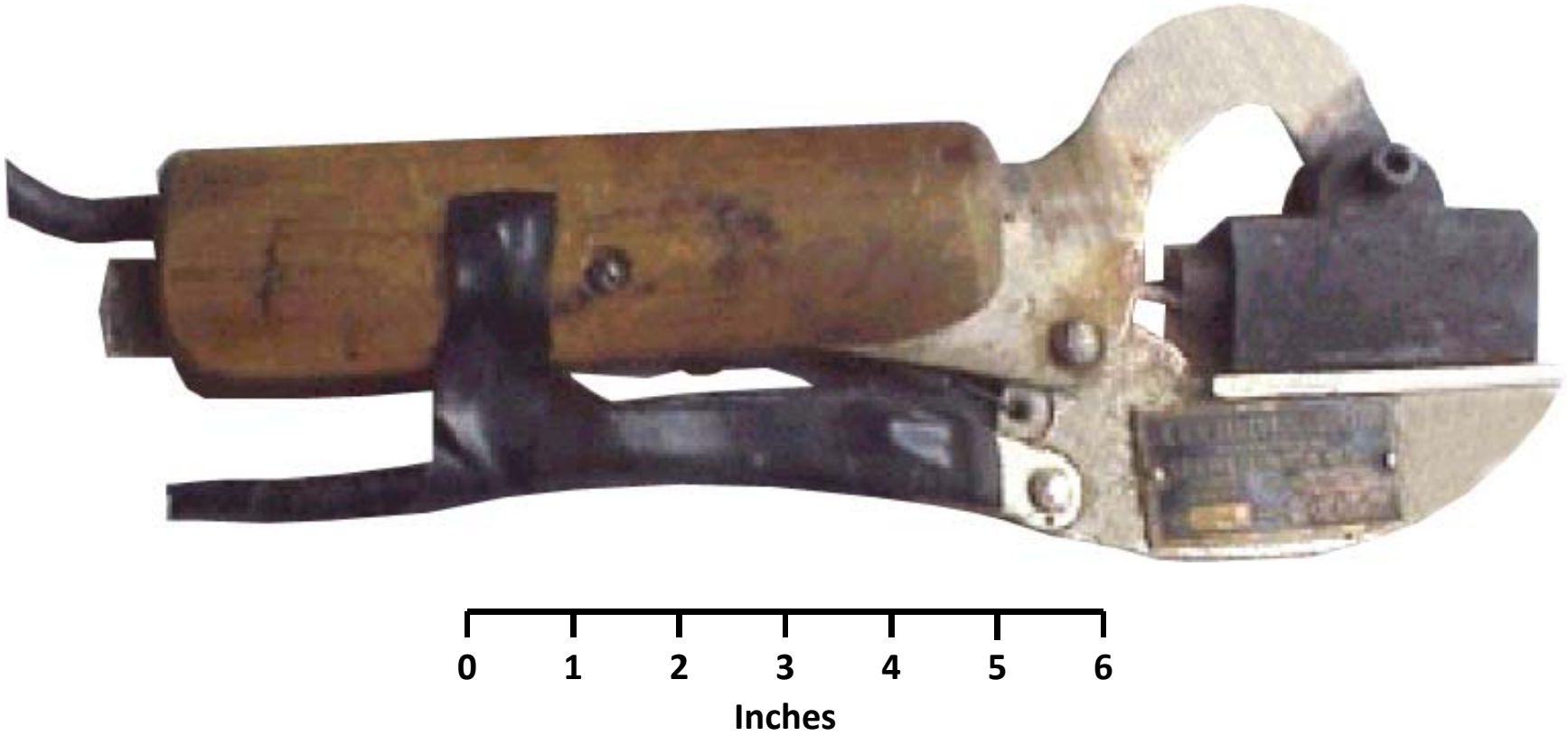




7

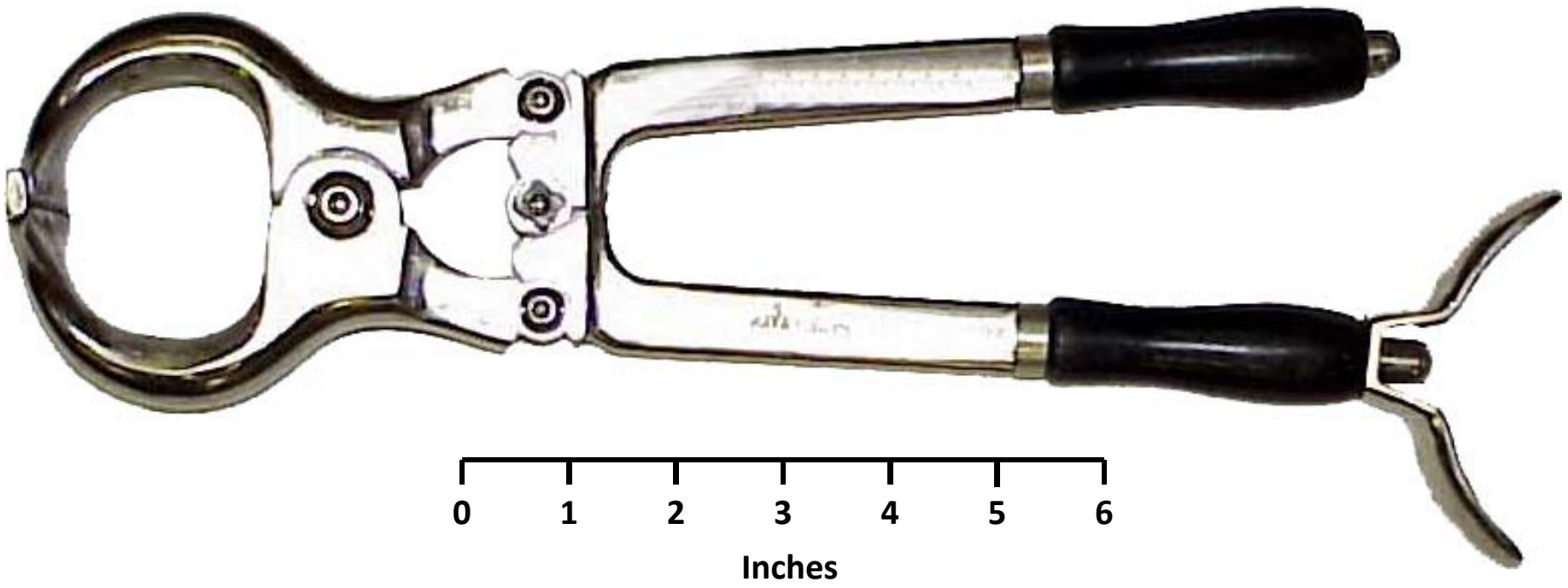


8



9

10



Intermediate Retail Meat Judging Class 1 (2014)

Name____ANSWER KEY_____ Contestant #_____ County_____

Official Placing = 3–2–4–1

Cuts = 2–4–5

(50 points possible)

Contestant Number _____

Placing Score _____

University of Kentucky
College of Agriculture
Animal Sciences Department

Contestant's Name

_____

_____

Address

_____

_____

County

_____

Class

Class 1 Bone-In Pork Chops

A	1 2 3 4	23
B	1 2 4 3	17
C	1 3 2 4	25
D	1 3 4 2	21
E	1 4 2 3	13
F	1 4 3 2	15
G	2 1 3 4	32
H	2 1 4 3	26
I	2 3 1 4	43
J	2 3 4 1	48
K	2 4 1 3	31
L	2 4 3 1	42
M	3 1 2 4	36
N	3 1 4 2	32
O	3 2 1 4	45
P	3 2 4 1	50
Q	3 4 1 2	37
R	3 4 2 1	46
S	4 1 2 3	18
T	4 1 3 2	20
U	4 2 1 3	27
V	4 2 3 1	38
W	4 3 1 2	31
X	4 3 2 1	40

Intermediate Retail Meat Judging Class 2 (2014)

Name____ANSWER KEY_____ Contestant #_____ County_____

Official Placing = 2–4–3–1

Cuts = 4–2–4

(50 points possible)

Contestant Number _____

Placing Score _____

University of Kentucky
College of Agriculture
Animal Sciences Department

Contestant's Name

_____

_____

Address

_____

_____

County

_____

Class

__**Class 2 Strip Steaks**___

A	1 2 3 4	**28**
B	1 2 4 3	**30**
C	1 3 2 4	**22**
D	1 3 4 2	**18**
E	1 4 2 3	**26**
F	1 4 3 2	**20**
G	2 1 3 4	**38**
H	2 1 4 3	**40**
I	2 3 1 4	**42**
J	2 3 4 1	**48**
K	2 4 1 3	**46**
L	2 4 3 1	**50**
M	3 1 2 4	**26**
N	3 1 4 2	**22**
O	3 2 1 4	**36**
P	3 2 4 1	**42**
Q	3 4 1 2	**28**
R	3 4 2 1	**38**
S	4 1 2 3	**32**
T	4 1 3 2	**26**
U	4 2 1 3	**42**
V	4 2 3 1	**46**
W	4 3 1 2	**30**
X	4 3 2 1	**40**

Intermediate Hay Judging Class – 2014

Name_____ANSWER KEY_____ Contestant #_____ County_____

Official Placing = 4–3–2–1

Cuts = 3–2–7

(Placing the hay is worth a possible 50 points and each of the 5 questions is worth 10 points for 50 possible – Grand Total of 100 possible points)

Contestant Number _____

Placing Score _____

University of Kentucky
College of Agriculture
Animal Sciences Department

Contestant's Name

_____

_____

Address

_____

_____

County

_____

Class

__Hay Judging Class____

A	1 2 3 4	12
B	1 2 4 3	15
C	1 3 2 4	14
D	1 3 4 2	19
E	1 4 2 3	20
F	1 4 3 2	22
G	2 1 3 4	19
H	2 1 4 3	22
I	2 3 1 4	28
J	2 3 4 1	40
K	2 4 1 3	34
L	2 4 3 1	43
M	3 1 2 4	23
N	3 1 4 2	28
O	3 2 1 4	30
P	3 2 4 1	42
Q	3 4 1 2	40
R	3 4 2 1	47
S	4 1 2 3	32
T	4 1 3 2	34
U	4 2 1 3	39
V	4 2 3 1	48
W	4 3 1 2	43
X	4 3 2 1	50

[Turn over and answer questions on back of this sheet]

Questions

1.) Which hay has the poorest color? ___1__

2.) Between 3 and 4, which hay has the most desirable leaf:stem ratio? ___4__

3.) Between 1 and 4, which hay would you expect to have the lowest TDN? ___1__

4.) Which hay has the highest percentage of Red Clover? __3___

5.) Between 1 and 2, which hay has the most desirable color? ___2__

Name____ANSWER KEY_____ Contestant #_____County_____

Intermediate Individual Quality Assurance – 2014

You are the manager of a 10,000 head contract wean-to-finish operation. Recently, you noticed a large percentage of the pigs had reduced feed intakes, had developed a persistent cough and began running temperatures. Your veterinarian has prescribed **Pulmotil 90** for treatment. Use the **Pulmotil 90** label and your knowledge of quality assurance management to answer the **10 questions** below relating to quality assurance. **Circle your answers**. (10 questions worth 5 points per question for 50 total points)

1. **Pulmotil 90 is labeled for what other species of farm animal(s)?**

   A.) Cattle
   B.) Sheep
   C.) Turkeys
   D.) Horses

2. **What is the active ingredient in Pulmotil 90?**

   A.) Sulfamethazine
   B.) Oxytetracycline
   C.) Tilmicosin
   D.) Ground corn cobs

3. **What is the best way to fully understand how to properly use Pulmotil 90?**

   A.) Carefully read and follow the entire medication insert for Pulmotil 90
   B.) Follow your veterinarians instructions
   C.) Carefully read and follow the entire medication label for Pulmotil 90
   D.) All are correct

4. **What is the appropriate amount of Pulmotil 90 that is recommend for use in pigs?**

   A.) 568-757grams per ton of feed
   B.) 181-363 grams per ton of feed
   C.) 12.5 mg per kg per head per day
   D.) 90.7 grams per pound

5. **How is Pulmotil 90 to administered to your pigs?**

   A.) On the skin (topically)
   B.) Under the skin (subcutaneously)
   C.) In the nose (intranasally)
   D.) In the feed

6. **Which of the following is not a true statement?**

A.) Swine intended for human consumption must not be slaughtered within 7 days of the last treatment of this drug product.

B.) This drug product is not approved for use in calves intended to be processed for veal.

C.) Cattle intended for human consumption must not be slaughtered within 28 days of the last treatment of this drug product.

D.) This drug product is not approved for use in male dairy cattle 20 months of age or older.

E.) All of the statements are true.

7. **What is the maximum length of time Pulmotil 90 can be given to pigs?**

A.) 7 days before expected outbreak

C.) 14 days

B.) 21 days

D.) 45 days

8. **If your veterinarian instructed you to provide 272 grams of tilmicosin, how much Pulmotil 90 would you add per ton of feed?**

A.) 3 pounds per ton

C.) 13.6 grams per pound

B.) 300 pounds per ton

D.) 2 pounds per ton

9. **Treatment with Pulmotil 90 should not be at the same time or following the administration of what?**

A.) Tilmicosin phosphate

C.) Neutrophils

B.) Penicillin

D.) Injectable macrolide

10. **How is Pulmotil 90 to be stored long term?**

A.) 77º C

C.) 77º F

B.) 104º F

D.) 40º C

Elanco™ AF0472

For Use in Swine and Cattle Feeds Only

Pulmotil® 90 tilmicosin™

Net Weight: 10 kg (22.0 lb)

Type A Medicated Article

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 drug shall be fed to animals only by or upon a lawful veterinary feed directive issued by a licensed veterinarian in the course of the veterinarian's professional practice.

Active Drug Ingredient: Tilmicosin (as tilmicosin phosphate) 90.7 g per lb (200 g per kg)

Inert Ingredients: Ground corncobs.

Description: Pulmotil® is a formulation of the antibiotic tilmicosin. Tilmicosin is produced semi-synthetically and is in the macrolide class of antibiotics. Each kilogram of Type A Medicated Article contains 200 grams (0.44 lbs) of tilmicosin adsorbed onto ground corncobs.

Indications:
Swine: For the control of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae* and *Pasteurella multocida*.

Cattle: For the control of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni* in groups of beef and non-lactating dairy cattle, where active BRD has been diagnosed in at least 10% of the animals in the group.

Feeding Directions:
Swine: Tilmicosin is to be fed continuously at 181 grams to 363 grams per ton (200 ppm to 400 ppm) of Type C medicated feed as the sole ration for a 21-day period, beginning approximately 7 days before an anticipated disease outbreak.

Cattle: Tilmicosin is to be fed continuously for a single, 14 day period at 568 grams to 757 grams (626 ppm to 834 ppm) per ton on a 100% dry matter basis of Type C medicated feed as the sole ration to provide 12.5 mg tilmicosin/kg/head/day.

IMPORTANT: Must be thoroughly mixed in swine or cattle feeds before use.

Mixing Directions:
For Incorporation into Swine Feeds: Thoroughly mix Pulmotil Type A medicated article with feed to provide a Type B medicated feed containing up to 36,300 grams tilmicosin per ton or to provide a complete Type C medicated feed containing 181 to 363 g tilmicosin per ton. Do not use in any feeds containing bentonite. Bentonite in feeds may affect the efficacy of tilmicosin.

Starting concentration of Pulmotil 90 Type A Medicated Article[a]	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type B Medicated Feed	
grams per pound	pounds	grams per ton	grams per pound
90.7	400	36,300	18.1
	300	27,200	13.6
	200	18,100	9.1

Starting concentration of Pulmotil 90 Type A Medicated Article[a]	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type C Medicated Feed
grams per pound	pounds	grams per ton
90.7	4	363
	3	272
	2	181

[a]Pulmotil 90 contains 90.7 g tilmicosin phosphate per pound

For Incorporation into Cattle Feeds: Thoroughly mix Pulmotil Type A medicated article with feed to provide a Type B medicated feed containing up to 36,300 grams tilmicosin per ton on a 100% dry matter basis or to provide a complete Type C medicated feed containing 568 to 757 g tilmicosin per ton on a 100% dry matter basis. Complete Type C medicated feeds should not be pelleted. Do not use in any feeds containing bentonite, cottonseed meal, or cottonseed hulls. Bentonite, cottonseed meal, or cottonseed hulls in feeds may affect the efficacy of tilmicosin.

Starting concentration of Pulmotil 90 Type A Medicated Article[a]	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type B Medicated Feed[b]	
grams per pound	pounds	grams per ton	grams per pound
90.7	400	36,300	18.1
	200	18,100	9.1
	100	9,070	4.5

Starting concentration of Pulmotil 90 Type A Medicated Article[a]	Amount of Type A Medicated Article to add per ton	Resulting concentration in Type C Medicated Feed[b]
grams per pound	pounds	grams per ton
90.7	8.35	757
	6.26	568

[a]Pulmotil 90 contains 90.7 g tilmicosin phosphate per pound
[b]100% dry matter basis

CAUTION:
Do not allow horses or other equines access to feeds containing tilmicosin. The safety of tilmicosin has not been established in cattle or male swine intended for breeding purposes. To assure both food safety and responsible use in cattle, the treatment of cattle with this medicated feed is required to be initiated within the first 45 days of the production period. The treatment should not occur concurrent with or following administration of an injectable macrolide, or within 3 days following administration of a non-macrolide injectable BRD therapy.

Swine: Feed containing tilmicosin shall not be fed to pigs for more than 21 days during each phase of production without ceasing administration for reevaluation of antimicrobial use by a licensed veterinarian before re-initiating a further course of therapy with an appropriate antimicrobial. Veterinary Feed Directive (VFD) expiration date for swine must not exceed 90 days from the time of issuance. VFDs for tilmicosin phosphate shall not be refilled.

Cattle: Use only in cattle fed in confinement for slaughter. Tilmicosin medicated feed treatment has not been evaluated in cattle with severe clinical disease. Cattle with severe clinical illness should be evaluated for individual treatment with an alternative non-macrolide therapy. The expiration date for a tilmicosin Veterinary Feed Directive (VFD) for cattle must not exceed 45 days from the time of issuance. VFDs for tilmicosin phosphate shall not be refilled.

WARNINGS:

RESIDUE WARNING: Swine: Swine intended for human consumption must not be slaughtered within 7 days of the last treatment of this drug product.

RESIDUE WARNING: Cattle: Cattle intended for human consumption must not be slaughtered within 28 days of the last treatment with this drug product.

This drug product is not approved for use in female dairy cattle 20 months of age or older. Use in these cattle may cause drug residues in milk. This drug product is not approved for use in calves intended to be processed for veal. A withdrawal period has not been established in pre-ruminating calves.

User Safety Warnings: Avoid inhalation, oral exposure and direct contact with skin or eyes. Operators mixing and handling Pulmotil 90 should use protective clothing, impervious 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 contains more detailed occupational safety information. To report adverse effects in users, to obtain more information, or to obtain a Material Safety Data Sheet, call 1-800-428-4441.

Clinical Pharmacology: Oral dosing of tilmicosin phosphate to swine at 181 to 363 g/ton of feed results in serum tilmicosin levels, which do not correlate with efficacy. Lung concentrations of tilmicosin are significantly higher than serum. Following 7 consecutive days of administering tilmicosin-medicated feeds to swine, the concentration of tilmicosin in respiratory tissues, phagocytic cells, and nasal secretions was significantly higher than that of plasma or serum. Lung levels are achieved within 2 days after beginning feeding and plateau by 4 days. Using *in-vitro* incubation techniques, the ratio of intracellular to extracellular concentrations of tilmicosin for neutrophils, monocyte-macrophages and alveolar macrophages were 69, 19 and 17, respectively, after four hours of incubation. Although lower levels of accumulation were observed *in-vivo*, swine alveolar macrophages have been shown *in-vitro* and *in-vivo* to concentrate large amounts of tilmicosin; these cells may be important for *in-vivo* distribution of the drug and may serve as an important reservoir for tilmicosin in lung tissue.

Oral dosing of tilmicosin phosphate to cattle to target a dose of 12.5 mg/kg body weight resulted in serum tilmicosin concentrations above the analytical limit of quantification (0.5 ng/mL) within 12 hours following treatment administration.

The relationship of serum tilmicosin concentration to lung tilmicosin concentration has not been determined following oral administration of tilmicosin.

Toxicology: The cardiovascular system is the target of toxicity in laboratory and domestic animals given tilmicosin by oral or parenteral routes. Primary cardiac effects are increased heart rate (tachycardia) and decreased contractility (negative inotropy). Given orally, the median lethal dose is 800 mg/kg in fasted rats and 2250 mg/kg in non-fasted rats. No compoundrelated lesions were found at necropsy. Results of genetic toxicology studies were all negative. Results of teratology and reproduction studies in rats were all negative. The no effect level in dogs after daily oral doses for up to one year is 4 mg/kg of body weight. Tilmicosin was included in the diet of 18 adult horses for a period of 14 days at dose levels of 400, 1200 and 2000 ppm. Some horses at both the low and high dose levels demonstrated gastrointestinal disturbance with more severe colic evident at the higher levels. One horse died after consuming the 2000 ppm diet. A study was conducted in cattle administered oral tilmicosin at 12.5, 25.0 or 37.5 mg/kg for 42 days or administered 12.5 mg/kg of oral tilmicosin for 14 days followed by 20 mg/kg injection of tilmicosin or saline (volume equivalent). Cardiac lesions observed (one animal in the 12.5 mg/kg for 42 days treatment group; one animal in the 12.5 mg/kg for 14 days followed by tilmicosin injection treatment group) were not considered clinically significant as no other abnormalities were seen and the affected animals were clinically normal.

To report adverse effects, access medical information or obtain additional product information, call 1-800-428-4441.

Storage Information:
Store at less than or equal to 25°C (77°F). Excursions to 40°C (104°F) are acceptable.
Avoid excessive moisture.

Restricted Drug (California) - Use Only as Directed
NADA # 141-064, Approved by FDA

Manufactured For:
Elanco Animal Health
A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

TAKE TIME TO

OBSERVE LABEL DIRECTIONS

Name____ANSWER KEY___ Contestant #_____County_____

Intermediate Quiz – 2014

Carefully circle the correct answer to each of the questions below. (Each question is worth 2 points each for a total of 50 points)

1.) A female pig nursing a litter of pigs is called a _____.

a. Capone
c. Sow
b. Gilt
d. Nanny

2.) Removing the testicles from a male lamb is called _____.

a. Elastration
c. Castration
b. Emulsification
d. Elastrator

3.) What essential nutrient do cattle require the greatest amount of?

a. Water
c. Vitamins
b. Protein
d. Minerals

4.) What is the average gestation length in goats?

a. 130 days
c. 6 months
b. 150 days
d. 160 days

5.) What is the most widely fed feed grain for livestock in the U.S.?

a. Wheat
c. Corn
b. Barley
d. Grain sorghum

6.) What mineral should not be included in diets for sheep?

a. Phosphorus
c. Molybdenum
b. Magnesium
d. Copper

7.) Which of the following is a monogastric?

a. Barrow
c. Wether
b. Steer
d. All of the above

8.) Which of the following is a ruminant?

a. Cow
c. Buck
b. Ram
d. All of the above

9.) What is the average length of the estrous cycle in a heifer?

a. 7 days
c. 21 days
b. 14 days
d. 28 days

10.) What is the average length of gestation in cattle?

a. 114 days
c. 244 days
b. 150 days
d. 283 days

11.) Which one of the following hormones maintains pregnancy in farm animals?

a. Estrogen
c. Prostaglandin
b. Progesterone
d. Testosterone

12.) Which of the following is a quality grade for beef?

a. Prime
c. Choice
b. Unacceptable
d. Both a. and c.

13.) Which management practices are performed on baby piglets?

a. Dock tails
c. Give iron injection
b. Clip needle teeth
d. All of the above

14.) Which of the following should not be fed to pigs?

a. Wheat bran
c. Distillers dried grains with solubles
b. Cottonseed meal
d. Hominy feed

15.) The North American International Livestock Exposition is located where?

a. Houston
c. Denver
b. Louisville
d. Kansas City

16.) Which of the following is not fed to livestock primarily for energy?

a. Soybean meal
c. Steam flaked corn
b. Molasses
d. Soybean hulls

17.) Which of the following is not a high priced wholesale cut in lambs?

a. Breast
c. Loin
b. Rack
d. Leg

18.) Which of the following pig breeds is known as the “mother breed”?

a. Landrace
c. Chester White
b. Yorkshire
d. Hampshire

19.) The marketing ad “The Other White Meat” refers to which species?

a. Beef
b. Pork
c. Lamb
d. Chevon

20.) The female reproductive organ where the embryo develops is called the _____.

a. Ovary
b. Oviduct
c. Cervix
d. Uterus

21.) Mating a male and a female of different breeds is called _____.

a. Linebreeding
b. Inbreeding
c. Crossbreeding
d. Outcrossing

22.) Which of the following is considered a by-product feed?

a. Corn Gluten Feed
b. Soybean Hull Pellets
c. Distillers Dried Grains
d. All of these are by-product feeds

23.) For which of the following species is it typical for the females to have multiple births?

a. Beef cattle
b. Pig
c. Goat
d. Both b. and c.

24.) The period of time when a calf nurses its mother is called _____.

a. Gestation
b. Lactation
c. Generation interval
d. Postpartum interval

25.) Where is the hormone testosterone produced?

a. Testicle
b. Ovary
c. Brain
d. Pancreas

County_____ANSWER KEY_____

Team Members _____

_____

Intermediate Team Quality Assurance Exercise – 2014

You are a pork producer and operate a 1000-head wean-to-finish swine operation. As a practical way to keep track of pigs that have been injured or treated for illness, you sort them into one pen that you keep designated as a hospital or "sick" pen. There are five (5) pigs in the sick pen that have reached market weight and have fully recovered their problems. You want to send as many of these pigs as possible to market on Monday, February 17, 2014, and need to make sure any withdrawal times are over. Using the five (5) medication inserts provided, answer the questions below and finish filling in the table of treatment records on the reverse side of this page. Once the table is filled in, list the pigs that can be sold tomorrow and those that should be held until a later date. A calendar is provided for your use as well. (Each answer is worth 7 points each for a total of 210 points)

NOTES ON TREATMENTS:

- Assume you accurately followed the directions on the medication insert.
- Assume the treatment date given in the treatment records is the last date of treatment.
- If a range of recommended dosage is given on the medication insert, assume you gave the highest dosage recommended for the highest weight range given.
- You are not able to provide medications via drinking water.

1) Which medication can be administered orally? _____**Enterisol Ileitis**_____

2) When giving Tylan 200, what's the largest amount that should be administered in one site? _**5**__mL

3) Which of the medications could also be given to sheep? _____**None**_____

4) Which of the medications is approved for use in a 3-yr old lactating dairy cow? ___**Excenel**_____

5) Which of the medications has to be rehydrated before use? _____**Enterisol Ileitis**_____

[OVER]

TREATMENT RECORD

Treatment Date & Time	Pig Treated (Tag #)	Pig Weight	Condition Being Treated	Medication Given	Route Given[a]	Amount Given	Required Withdrawal Period (days)	Date & Time Withdrawal Complete
Jan. 30, 2014 9:00 a.m.	# 57	275 lbs	Swine Dysentery	Tylan 200	IM	5.5 mL	14 days	Feb. 13, 2014 9:00 a.m.
Jan. 25, 2014 10:00 a.m.	# 49	300 lbs	Lungworms	Dectomax	IM	4.0 mL	24 days	Feb. 18, 2014 10:00 a.m.
Dec. 24, 2013 2:30 p.m.	# 76	270 lbs	Ileitis	Enterisol Ileitis	O	2.0 mL	21 days	Jan. 14, 2014 2:30 p.m.
Feb. 9, 2014 8:00 a.m.	# 28	286 lbs	Haemophilus parasuis	Draxxin	IM	3.25 mL	5 days	Feb. 14, 2014 8:00 a.m.
Feb. 14, 2014 12:00 noon	# 50	296 lbs	Pasteurella multicida	Excenel	IM	8.0 mL	4 days	Feb 18, 2014 12:00 noon

Intramuscular = IM
Subcutaneous = SC
Intravenous = IV
Topical = T
Oral = O

Pigs That Can be Sold Tomorrow	Pigs to Hold Until a Later Date
# 57	# 49
# 76	# 50
# 28	

CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
December 1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	January 1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	February 1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	March 1

DECTOMAX® INJECTABLE SOLUTION

Pfizer Animal Health

(doramectin)
Antiparasitic
1% injectable solution for cattle and swine 10 mg/mL

PRODUCT DESCRIPTION: Dectomax injectable solution is a ready-to-use, colorless to pale yellow, sterile solution containing 1% w/v doramectin (10 mg/mL). In cattle, Dectomax is formulated to deliver the recommended dosage (200 mcg/kg of body weight) when given by subcutaneous (SC) or intramuscular (IM) injection at the rate of 1 mL/110 lb of body weight. In swine, Dectomax is formulated to deliver the recommended dosage (300 mcg/kg of body weight) when given by IM injection at the rate of 1 mL/75 lb of body weight.

PRODUCT CHARACTERISTICS: Dectomax injectable solution is a highly active, broad-spectrum parasiticide for parenteral administration to cattle and swine. It contains doramectin, a novel fermentation-derived macrocyclic lactone discovered by Pfizer Inc. Doramectin is isolated from fermentations of selected strains derived from the soil organism *Streptomyces avermitilis.*

A primary mode of action of macrocyclic lactones is to modulate chloride ion channel activity in the nervous system of nematodes and arthropods. Macrocyclic lactones bind to receptors that increase membrane permeability to chloride ions. This inhibits the electrical activity of nerve cells in nematodes and muscle cells in arthropods and causes paralysis and death of the parasites. In mammals, the neuronal receptors to which macrocyclic lactones bind are localized within the central nervous system (CNS), a site reached by only negligible concentrations of doramectin.

One dose of Dectomax injectable solution effectively treats and controls a wide range of roundworm and arthropod parasites that impair the health and productivity of cattle and swine. Studies have demonstrated the safety margin of Dectomax injection in cattle and swine. In USA trials, no toxic signs were seen in cattle given up to 25 times the recommended dose, or in swine given up to 10 times the recommended dose. Studies also demonstrated safety in neonatal calves and piglets treated with up to 3 times the recommended dose. In males (bulls and boars) and females (cows and sows during folliculogenesis, implantation, organogenesis, and through gestation), a dose 3 times the recommended dose had no effect on breeding performance.

PRODUCT INDICATIONS: *Cattle:* Dectomax injectable solution is indicated for the treatment and control of the following harmful species of gastrointestinal roundworms, lungworms, eyeworms, grubs (see PRECAUTIONS), sucking lice (see PRECAUTIONS), and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Gastrointestinal Roundworms (adults and fourth stage larvae) - *Ostertagia ostertagi* (including inhibited larvae), *O. lyrata, Haemonchus placei, Trichostrongylus axei, T. colubriformis, T. longispicularis*[1], *Cooperia oncophora, C. pectinata*[1], *C. punctata, C. surnabada* (syn. *mcmasteri), Bunostomum phlebotomum*[1], *Strongyloides papillosus*[1], *Oesophagostomum radiatum, Trichuris* spp.[1]
Lungworms (adults and fourth stage larvae) - *Dictyocaulus viviparus*
Eyeworms (adults) - *Thelazia spp.*
Grubs (parasitic stages) - *Hypoderma bovis, H. lineatum*
Sucking Lice - *Haematopinus eurysternus, Linognathus vituli, Solenopotes capillatus*
Mange Mites - *Psoroptes bovis, Sarcoptes scabiei*
[1]adults

Dectomax injectable solution has been proved to effectively control infections and to protect cattle from reinfection with *Cooperia oncophora* and *Haemonchus placei* for 14 days, *Ostertagia ostertagi* for 21 days, and *C. punctata*, *Oesophagostomum radiatum*, and *Dictyocaulus viviparus* for 28 days after treatment.

Swine: Dectomax injectable solution is indicated for the treatment and control of the following species of gastrointestinal roundworms, lungworms, kidney worms, sucking lice (see PRECAUTIONS), and mange mites. Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Gastrointestinal Roundworms (adults and fourth stage larvae) - *Ascaris suum, Oesophagostomum dentatum, Oesophagostomum, quadrispinulatum*[1], *Strongyloides ransomi*[1], *Hyostrongylus rubidus*1
Lungworms (adults) - *Metastrongylus* spp. Kidney Worms (adults) - *Stephanurus dentatus*
Mange Mites (adults and immature stages) - *Sarcoptes scabiei var. suis*
Sucking Lice (adults and immature stages) - *Haematopinus suis*
[1]adults

DOSAGE: *Cattle:* Administer Dectomax injectable solution at the recommended dosage of 200 mcg doramectin per kg (91 mcg/lb) of body weight. Each mL contains 10 mg of doramectin, sufficient to treat 110 lb (50 kg) of body weight.

Body Weight (lb)	Dose (mL)
110	1
220	2
330	3
440	4
550	5
660	6
770	7
880	8
990	9
1,100	10

Swine: Administer Dectomax injectable solution at the recommended dosage of 300 mcg doramectin per kg (136 mcg/lb) of body weight. Each mL contains 10 mg of doramectin, sufficient to treat 75 lb (34 kg) of body weight.

Body Weight (lb)	Dose (mL)
15	0.2
30	0.4
45	0.6
60	0.8
75	1.0
150	2.0
225	3.0
300	4.0
375	5.0
450	6.0

RECOMMENDED TREATMENT PROGRAM FOR SWINE: To effectively initiate control of mange and sucking lice in swine, it is important to treat all animals in the herd. After initial treatment, use Dectomax regularly as follows:

Breeding Animals:

Sows: Treat 7-14 days prior to farrowing to minimize exposure of piglets to mites and sucking lice.

Gilts: Treat 7-14 days prior to breeding. Treat 7-14 days prior to farrowing.

Boars: Treat a minimum of 2 times per year.

Feeder Pigs: Treat any new feeder pigs upon arrival at farm or before placement in clean quarters.

Weaners, Growers, Finishers: Weaners and grow-out/finisher pigs should be treated before placement in clean quarters.

For effective mange elimination, care must be taken to prevent reinfestation from exposure to untreated animals or contaminated facilities. ADMINISTRATION: Dry, sterile equipment and aseptic procedures should be used when withdrawing and administering Dectomax. For multiple treatments either automatic injection equipment or an aspirating needle should be used.

Cattle: Administer Dectomax injectable solution by the SC or IM route. Injections should be made using a 16 gauge needle for adult cattle or an 18 gauge needle for young animals. Needles 1/2-3/4" in length are suggested for SC administration. A 1-1/2" needle is suggested for IM administration. SC injections should be administered under the loose skin in front of or behind the shoulder. IM injections should be administered into the muscular region of the neck. Beef Quality Assurance guidelines recommend SC administration as the preferred route.

Swine: Administer Dectomax injectable solution by the IM route. Inject in the neck region using an 18 gauge x 1" needle for young animals; a 16 gauge x 1-1/2" needle for sows and boars. To accurately meter doses administered to piglets, use of a tuberculin syringe and 20 gauge x 1" needle is recommended.

WARNINGS: Not for human use. Keep out of reach of children. The material safety data sheet (MSDS) contains more detailed occupational safety information. To report adverse effects in users, to obtain more information, or to obtain an MSDS, call 1-800-366-5288.

RESIDUE WARNINGS: *Cattle:* Do not slaughter for human consumption within 35 days of treatment. Not for use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in preruminating calves. Do not use in calves to be processed for veal. *Swine:* Do not slaughter for human consumption within 24 days of treatment.

PRECAUTIONS: Dectomax has been developed specifically for use in cattle and swine only. This product should not be used in other animal species as severe adverse reactions, including fatalities in dogs, may result.

For SC injection in cattle only. For IM injection in swine and cattle. This product is approved for the treatment and control of sucking lice. For treatment of biting lice in cattle, use of Dectomax Pour-On is recommended.

Dectomax is highly effective against all stages of cattle grubs. However, proper timing of treatment is important. For most effective results, cattle should be treated as soon as possible after the end of the heel fly (warble) season.

Destruction of *Hypoderma* larvae (cattle grubs) at the period when these grubs are in vital areas may cause undesirable host-parasite reactions including the possibility of fatalities. Killing *H. lineatum* when it is in the tissue surrounding the gullet may cause bloat; killing *H. bovis* when it is in the vertebral canal may cause staggering or paralysis. These reactions are not specific to treatment with Dectomax, but can occur with any successful treatment of grubs. Cattle should be treated either before or after these stages of grub development. Consult your veterinarian concerning the proper time for treatment.

Cattle treated with Dectomax after the end of the heel fly season may be re-treated with Dectomax during the winter for internal parasites, mange mites, or sucking lice, without danger of grub-related reactions. A planned parasite control program is recommended.

ENVIRONMENTAL SAFETY: Studies indicate that when doramectin comes in contact with the soil, it readily and tightly binds to the soil and becomes inactive over time. Free doramectin may adversely affect fish and certain aquatic organisms. Do not permit water runoff from feedlots to enter streams or ponds. Do not contaminate water by direct application or by the improper disposal of drug containers. Dispose of containers in an approved landfill.

As with other avermectins, doramectin is excreted in the dung of treated animals and can inhibit the reproduction and growth of pest and beneficial insects that use dung as a source of food and for reproduction. The magnitude and duration of such effects are species and life- cycle specific. When used according to label directions, the product is not expected to have an adverse impact on populations of dung- dependent insects.

Store Below 30°C (86°F)

HOW SUPPLIED: Dectomax is available in 100-mL, 200-mL, and 500-mL multi-dose, rubber-capped glass vials. NADA #141-061, Approved by FDA

Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism. Not for human use

Restricted Drug (CA) Use only as directed.

Laboratórios Pfizer Ltda. - Animal Health Division, Av. Monteiro Lobato, 2270, Guarulhos, São Paulo, Brasil CNPJ n° 46, 070,868/0001-69

Licenciado no Ministério da Agricultura sob o n° 4,055/92, em 14/08/92 Licensed in the Ministry of Agriculture under n° 4,055/92, on 08/14/92 *Distributed by:* Pfizer Animal Health, Div. of Pfizer Inc, NY, NY 10017 79-5199-00-8

July 2005 Made in Brazil

NAC No.: 36900094

ENTERISOL® ILEITIS

Boehringer Ingelheim

Lawsonia Intracellularis Vaccine

Avirulent Live Culture

For use in swine only

Indications

Recommended for the vaccination of healthy, susceptible swine 3 weeks of age or older as an aid in the prevention and control of porcine proliferative enteropathy (Ileitis) caused by *Lawsonia intracellularis.* In clinical studies, this vaccine significantly prevented gross and microscopic intestinal lesions of Ileitis and significantly prevented colonization of virulent *L. intracellularis* after challenge.

Directions

Rehydrate the vaccine by adding the full contents of the accompanying sterile water diluent to the vaccine vial. Shake well and use immediately.

Vaccination by oral drenching

Administer a single dose orally. The dose volume is as follows:

10 dose/20 mL presentation: one 2 mL dose per pig.

50 dose/100 mL presentation: one 2 mL dose per pig.

Vaccination via the drinking water

Conventional Water Directions (open trough or barrel type [tank] system)

1. Do not reconstitute the vaccine until ready to vaccinate.
2. Remove all medications, sanitizers, and disinfectants from drinking water a minimum of 72 hours (3 days) prior to and following vaccination.
3. Flush watering system with nonchlorinated/nontreated clean water to eliminate any antibacterial agents.
4. Reconstitute vaccine according to directions.
5. Add number of doses of vaccine equal to or more than the number of pigs to vaccinate, to the appropriate amount of clean, nontreated drinking water (see table).
6. Final solution containing vaccine should be consumed within 4 hours after reconstitution of the vaccine.

Directions for Automatic Watering Systems equipped with proportioner

Several types of medicators/proportioners are commercially available.

1. Do not reconstitute the vaccine until ready to vaccinate.
2. Remove all medications, sanitizers, and disinfectants from drinking water a minimum of 72 hours (3 days) prior to and following vaccination.
3. Provide sufficient watering space so that all pigs can drink within a 4-hour time frame.
4. Flush watering system with nontreated clean water to eliminate any antibacterial agents.
5. Set proportioner to deliver 1 oz. (30 mL) of vaccine solution per 1 gallon (4 liters) of water.
6. See Table to determine how many ounces of stock solution to prepare for pounds of pig to vaccinate.
7. Prepare vaccine concentrate as follows:
   a. Reconstitute vaccine according to directions.
   b. Add appropriate amount of clean, nontreated water to the container used for the stock solution.
   c. Add number of doses to the stock solution container equal to or more than the number of pigs to vaccinate.
   d. Mix thoroughly.
8. Insert proportioner hose into vaccine concentrate and start water flow. Continue until all concentrate has been consumed before changing water supply to direct flow. Do not medicate or use disinfectants for at least 3 days following vaccination.

Total Weight of Group of Pigs (# of pigs x average pig weight)	Trough/Tank Estimated water[1] consumption in 4-hour vaccination period	Proportioner[2] Oz. of stock solution needed. Set proportioner to deliver 1 oz. per gal.
100	0.17 gallons	0.17 oz.
500	0.85 gallons	0.85 oz.
1,000	1.7 gallons	1.7 oz.
20,000	34.0 gallons	34 oz.
30,000	51.0 gallons	51 oz.
40,000	68.0 gallons	68 oz.
50,000	85.0 gallons	85 oz.

[1] Based on 0.17 gallon consumed (21.8 oz.) per 100 pounds body weight in 4-hour period.

[2] Values for pigs 40 pounds or bigger.

Caution

The actual amount of water consumed may vary considerably depending on several factors, including environmental temperature. It is recommended to pre-measure the actual stock solution volume requirements the day prior to vaccination, during the planned vaccination time period. This should be done to accurately estimate the stock solution volume needed in order to ensure that the vaccine is consumed within the 4-hour recommended time frame.

Incompatibility

All materials used in administration of this vaccine must be free of antibiotic and disinfectant residue to prevent vaccine inactivation and reduced product efficacy.

Storage

Store at a temperature between 35-45°F (2-7°C). Do not freeze. After reconstitution, shake well and use entire contents immediately.

Withdrawal Period

Vaccinated pigs are not to be harvested for human consumption within 21 days after vaccination.

Disposal

Burn vaccine container and all unused contents by a procedure allowed by local, state, and Federal regulations.

Boehringer Ingelheim Vetmedica, Inc., St. Joseph, MO 64506

U.S. Veterinary License No. 124

30407-00

Code		
130-421	50 Doses/100 mL	30405-00
130-441	100 Doses/100 mL	30403-01

NAC No.: 1028147.1

EXCENEL® RTU STERILE SUSPENSION

by Zoetis

brand of ceftiofur hydrochloride sterile suspension

For intramuscular and subcutaneous use in cattle and intramuscular use in swine. This product may be used in lactating dairy cattle.

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

DESCRIPTION

EXCENEL RTU Sterile Suspension is a ready to use formulation that contains the hydrochloride salt of ceftiofur, which is a broad spectrum cephalosporin antibiotic.

Each mL of this ready-to-use sterile suspension contains ceftiofur hydrochloride equivalent to 50 mg ceftiofur, 0.50 mg phospholipon, 1.5 mg sorbitan monooleate, 2.25 mg sterile water for injection, and cottonseed oil.

Structure:

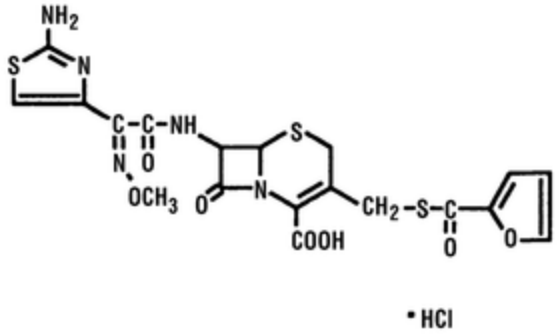


Figure 1.

Chemical Name of Ceftiofur Hydrochloride: 5-Thia-1-azabicyclo[4,2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl) (methoxyimino)-acetyl]amino]-3-[[(2-furanyl-carbonyl) thio] methyl]-8-oxo-,hydrochloride salt [6R-[6α,7β(Z)]]-

INDICATIONS

Swine: EXCENEL RTU Sterile Suspension is indicated for treatment/control of swine bacterial respiratory disease (swine bacterial pneumonia) associated with *Actinobacillus (Haemophilus) pleuropneumoniae, Pasteurella multocida, Salmonella choleraesuis* and *Streptococcus suis*.

Cattle: EXCENEL RTU Sterile Suspension is indicated for treatment of the following bacterial diseases:

- Bovine respiratory disease (BRD, shipping fever, pneumonia) associated with *Mannheimia haemolytica, Pasteurella multocida* and *Histophilus somni.*

- Acute bovine interdigital necrobacillosis (foot rot, pododermatitis) associated with *Fusobacterium necrophorum* and *Bacteroides melaninogenicus.*

- Acute metritis (0 to 14 days post-partum) associated with bacterial organisms susceptible to ceftiofur.

DOSAGE AND ADMINISTRATION

Shake well before using.

Swine: Administer intramuscularly at a dosage of 1.36 to 2.27 mg ceftiofur equivalents/lb (3.0 to 5.0 mg/kg) BW (1 mL of sterile suspension per 22 to 37 lb BW). Treatment should be repeated at 24 h intervals for a total of three consecutive days.

Cattle:

- For bovine respiratory disease and acute interdigital necrobacillosis: administer by intramuscular or subcutaneous administration at the dosage of 0.5 to 1.0 mg ceftiofur equivalents/lb (1.1 to 2.2 mg/kg) BW (1 to 2 mL sterile suspension per 100 lb BW). Administer daily at 24 h intervals for a total of three consecutive days. Additional treatments may be administered on Days 4 and 5 for animals which do not show a satisfactory response (not recovered) after the initial three treatments. In addition, for BRD only, administer intramuscularly or subcutaneously 1.0 mg ceftiofur equivalents/lb (2.2 mg/kg) BW every other day on Days 1 and 3 (48 h interval). Do not inject more than 15 mL per injection site.

Selection of dosage level (0.5 to 1.0 mg/lb) and regimen/duration (daily or every other day for BRD only) should be based on an assessment of the severity of disease, pathogen susceptibility and clinical response.

- For acute post-partum metritis: administer by intramuscular or subcutaneous administration at the dosage of 1.0 mg ceftiofur equivalents/lb (2.2 mg/kg) BW (2 mL sterile suspension per 100 lb BW). Administer at 24 h intervals for five consecutive days. Do not inject more than 15 mL per injection site.

CONTRAINDICATIONS

As with all drugs, the use of EXCENEL RTU Sterile Suspension is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS

NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.

Penicillins and cephalosporins can cause allergic reactions in sensitized individuals. Topical exposures to such antimicrobials, including ceftiofur, may elicit mild to severe allergic reactions in some individuals. Repeated or prolonged exposure may lead to sensitization. Avoid direct contact of the product with the skin, eyes, mouth, and clothing.

Persons with a known hypersensitivity to penicillin or cephalosporins should avoid exposure to this product.

In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. If allergic reaction occurs (e.g., skin rash, hives, difficult breathing), seek medical attention.

The material safety data sheet contains more detailed occupational safety information. To obtain a material safety data sheet (MSDS) please call 1-800-733-5500. To report any adverse event please call 1-800-366-5288.

RESIDUE WARNINGS:

Swine: When used according to label indications, dosage, and route of administration, treated swine must not be slaughtered for 4 days following the last treatment. Use of dosages in excess of those indicated or by unapproved routes of administration may result in illegal residues in edible tissues.

Cattle: When used according to label indications, dosage and route of administration, treated cattle must not be slaughtered for 3 days following the last treatment. When used according to label indications, dosage and route of administration, a milk discard time is not required. Uses of dosages in excess of those indicated or by unapproved routes of administration, such as intramammary, may result in illegal residues in edible tissues and/or milk. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

PRECAUTIONS

The effects of ceftiofur on cattle and swine reproductive performance, pregnancy, and lactation have not been determined.

Swine: Areas of discoloration associated with the injection site at time periods of 11 days or less may result in trim-out of edible tissues at slaughter. The safety of ceftiofur has not been demonstrated for pregnant swine or swine intended for breeding.

Cattle: Following intramuscular or subcutaneous administration in the neck, areas of discoloration at the site may persist beyond 11 days resulting in trim loss of edible tissues at slaughter. Following intramuscular administration in the rear leg, areas of discoloration at the injection site may persist beyond 28 days resulting in trim loss of edible tissues at slaughter.

Draxxin®
(tulathromycin)
Injectable Solution

Antibiotic
100 mg of tulathromycin/mL

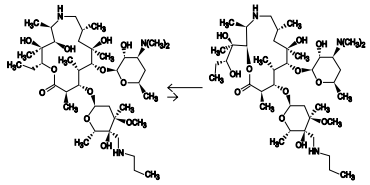
For subcutaneous injection in beef and non-lactating dairy cattle and intramuscular injection in swine only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for veal.

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

DESCRIPTION
DRAXXIN Injectable Solution is a ready-to-use sterile parenteral preparation containing tulathromycin, a semi-synthetic macrolide antibiotic of the subclass triamilide. Each mL of DRAXXIN contains 100 mg of tulathromycin as the free base in a 50% propylene glycol vehicle, monothioglycerol (5 mg/mL), with citric and hydrochloric acids added to adjust pH.

DRAXXIN consists of an equilibrated mixture of two isomeric forms of tulathromycin in a 9:1 ratio. Structures of the isomers are shown below.

Figure 1.



The chemical names of the isomers are (2R,3S,4R,5R,8R,10R,11R,12S,13S,14R)-13-[[2,6-dideoxy-3-C-methyl-3-**O**-methyl-4-C-[(propylamino)methyl]-α-L-ribo-hexopyranosyl]oxy]-2-ethyl-3,4,10-trihydroxy-3,5,8,10,12,14-hexamethyl-11-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]-oxy]-1-oxa-6-azacyclopentadecan-15-one and(2S,3S,6R,8R,9R,10S,11S,12R)-11-[[2,6-dideoxy-3-C-methyl-3-**O**-methyl-4-C-[(propylamino)methyl]-α-L-ribohexopyranosyl]oxy]-2-[(1R,2R)-1,2-dihydroxy-1-methylbutyl]-8-hydroxy-3,6,8,10,12-pentamethyl-9-[[3,4,6-trideoxy-3-(dimethylamino)-β-D-xylo-hexopyranosyl]oxy]-1-oxa-4-azacyclotridecan-13-one,respectively.

INDICATIONS
Beef and Non-lactating Dairy Cattle

BRD – DRAXXIN Injectable Solution is indicated for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*; and for the control of respiratory disease in cattle at high risk of developing BRD associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*.

IBK – DRAXXIN Injectable Solution is indicated for the treatment of infectious bovine keratoconjunctivitis (IBK) associated with *Moraxella bovis*.

Foot Rot – DRAXXIN Injectable Solution is indicated for the treatment of bovine foot rot (interdigital necrobacillosis) associated with *Fusobacterium necrophorum* and *Porphyromonas levii*.

Swine

DRAXXIN Injectable Solution is indicated for the treatment of swine respiratory disease (SRD) associated with *Actinobacillus pleuropneumoniae*, *Pasteurella multocida*, *Bordetella bronchiseptica*, *Haemophilus parasuis*, and *Mycoplasma hyopneumoniae*; and for the control of SRD associated with *Actinobacillus pleuropneumoniae, Pasteurella multocida*, and *Mycoplasma hyopneumoniae* in groups of pigs where SRD has been diagnosed.

DOSAGE AND ADMINISTRATION
Cattle

Inject subcutaneously as a single dose in the neck at a dosage of 2.5 mg/kg (1.1 mL/100 lb) body weight (BW). Do not inject more than 10 mL per injection site.

Table 1. DRAXXIN Cattle Dosing Guide

Animal Weight (Pounds)	Dose Volume (mL)
100	1.1
200	2.3
300	3.4
400	4.5
500	5.7
600	6.8
700	8.0
800	9.1
900	10.2
1000	11.4

Swine

Inject intramuscularly as a single dose in the neck at a dosage of 2.5 mg/kg (0.25 mL/22 lb) BW. Do not inject more than 2.5 mL per injection site.

Table 2. DRAXXIN Swine Dosing Guide

Animal Weight (Pounds)	Dose Volume (mL)
15	0.2
30	0.3
50	0.6
70	0.8
90	1.0
110	1.3
130	1.5
150	1.7
170	1.9
190	2.2
210	2.4
230	2.6
250	2.8
270	3.1
290	3.3

CONTRAINDICATIONS
The use of DRAXXIN Injectable Solution is contraindicated in animals previously found to be hypersensitive to the drug.

WARNINGS
FOR USE IN ANIMALS ONLY.
NOT FOR HUMAN USE.
KEEP OUT OF REACH OF CHILDREN.
NOT FOR USE IN CHICKENS OR TURKEYS.

RESIDUE WARNINGS
Cattle

Cattle intended for human consumption must not be slaughtered within 18 days from the last treatment. Do not use in female dairy cattle 20 months of age or older. A withdrawal period has not been established for this product in pre-ruminating calves. Do not use in calves to be processed for veal.

Swine

Swine intended for human consumption must not be slaughtered within 5 days from the last treatment.

PRECAUTIONS
Cattle

The effects of DRAXXIN on bovine reproductive performance, pregnancy, and lactation have not been determined. Subcutaneous injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

Swine

The effects of DRAXXIN on porcine reproductive performance, pregnancy, and lactation have not been determined. Intramuscular injection can cause a transient local tissue reaction that may result in trim loss of edible tissue at slaughter.

ADVERSE REACTIONS
Cattle

In one field study, two calves treated with DRAXXIN at 2.5 mg/kg BW exhibited transient hypersalivation. One of these calves also exhibited transient dyspnea, which may have been related to pneumonia.

Swine

In one field study, one out of 40 pigs treated with DRAXXIN at 2.5 mg/kg BW exhibited mild salivation that resolved in less than four hours.

CLINICAL PHARMACOLOGY
At physiological pH, tulathromycin (a weak base) is approximately 50 times more soluble in hydrophilic than hydrophobic media. This solubility profile is consistent with the extracellular pathogen activity typically associated with the macrolides.[1] Markedly higher tulathromycin concentrations are observed in the lungs as compared to the plasma. The extent to which lung concentrations represent free (active) drug was not examined. Therefore, the clinical relevance of these elevated lung concentrations is undetermined.

Although the relationship between tulathromycin and the characteristics of its antimicrobial effects has not been characterized, as a class, macrolides tend to be primarily bacteriostatic, but may be bactericidal against some pathogens.[2] They also tend to exhibit concentration independent killing; the rate of bacterial eradication does not change once serum drug concentrations reach 2 to 3 times the minimum inhibitory concentration (MIC) of the targeted pathogen. Under these conditions, the time that serum concentrations remain above the MIC becomes the major determinant of antimicrobial activity. Macrolides also exhibit a post-antibiotic effect (PAE), the duration of which tends to be both drug and pathogen dependent. In general, by increasing the macrolide concentration and the exposure time, the PAE will increase to some maximal duration. Of the two variables, concentration and exposure time, drug concentration tends to be the most powerful determinant of the duration of PAE.

Tulathromycin is eliminated from the body primarily unchanged via biliary excretion.

1 Carbon C. Pharmacodynamics of macrolides, azalides, and streptogramins: effect on extracellular pathogens. *Clin Infect Dis* 1998;**27**:28-32.

2 Nightingale CJ. Pharmacokinetics and pharmacodynamics of newer macrolides. *Pediatr Infect Dis J* 1997;**16**:438-443.

Cattle

Following subcutaneous administration into the neck of feeder calves at a dosage of 2.5 mg/kg BW, tulathromycin is rapidly and nearly completely absorbed. Peak plasma concentrations generally occur within 15 minutes after dosing and product relative bioavailability exceeds 90%. Total systemic clearance is approximately 170 mL/hr/kg. Tulathromycin distributes extensively into body tissues, as evidenced by volume of distribution values of approximately 11 L/kg in healthy ruminating calves.[3] This extensive volume of distribution is largely responsible for the long elimination half-life of this compound [approximately 2.75 days in the plasma (based on quantifiable terminal plasma drug concentrations) versus 8.75 days for total lung concentrations (based on data from healthy animals)]. Linear pharmacokinetics are observed with subcutaneous doses ranging from 1.27 mg/kg BW to 5.0 mg/kg BW. No pharmacokinetic differences are observed in castrated male versus female calves.

3 Clearance and volume estimates are based on intersubject comparisons of 2.5 mg/kg BW administered by either subcutaneous or intravenous injection.

Swine

Following intramuscular administration to feeder pigs at a dosage of 2.5 mg/kg BW, tulathromycin is completely and rapidly absorbed (T_{max} ~0.25 hour). Subsequently, the drug rapidly distributes into body tissues, achieving a volume of distribution exceeding 15 L/kg. The free drug is rapidly cleared from the systemic circulation ($CL_{systemic}$ =187 mL/hr/kg). However, it has a long terminal elimination half-life (60 to 90 hours) owing to its extensive volume of distribution. Although pulmonary tulathromycin concentrations are substantially higher than concentrations observed in the plasma, the clinical significance of these findings is undetermined. There are no gender differences in swine tulathromycin pharmacokinetics.

MICROBIOLOGY
Cattle

Tulathromycin has demonstrated *in vitro* activity against *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, four pathogens associated with BRD; for *Moraxella bovis* associated with IBK; and against *Fusobacterium necrophorum* and *Porphyromonas levii* associated with bovine foot rot.

The MICs of tulathromycin against indicated BRD and IBK pathogens were determined using methods recommended by the Clinical and Laboratory Standards Institute (CLSI, M31-A2). The MICs against foot rot pathogens were also determined using methods recommended by the CLSI (M11-A6). All MIC values were determined using the 9:1 isomer ratio of this compound.

BRD – The MICs of tulathromycin were determined for BRD isolates obtained from calves enrolled in therapeutic and at-risk field studies in the U.S. in 1999. In the therapeutic studies, isolates were obtained from pre-treatment nasopharyngeal swabs from all study calves and from lung swabs or lung tissue of saline-treated calves that died. In the at-risk studies, isolates were obtained from nasopharyngeal swabs of saline-treated non-responders and from lung swabs or lung tissue of saline-treated calves that died. The results are shown in Table 3.

IBK – The MICs of tulathromycin were determined for *Moraxella bovis* isolates obtained from calves enrolled in IBK field studies in the U.S. in 2004. Isolates were obtained from pre-treatment conjunctival swabs of calves with clinical signs of IBK enrolled in the DRAXXIN and saline-treated groups. The results are shown in Table 3.

Foot Rot – The MICs of tulathromycin were determined for *Fusobacterium necrophorum* and *Porphyromonas levii* obtained from cattle enrolled in foot rot field studies in the U.S. and Canada in 2007. Isolates were obtained from pretreatment interdigital biopsies and swabs of cattle with clinical signs of foot rot enrolled in the DRAXXIN and saline-treated groups. The results are shown in Table 3.

Table 3. Tulathromycin minimum inhibitory concentration (MIC) values* for indicated pathogens isolated from field studies evaluating BRD and IBK in the U.S and from foot rot field studies in the U.S. and Canada.

Indicated pathogen	Date isolated	No. of isolates	MIC_{50}** (µg/mL)	MIC_{90}** (µg/mL)	MIC range (µg/mL)
Mannheimia haemolytica	1999	642	2	2	0.5 to 64
Pasteurella multocida	1999	221	0.5	1	0.25 to 64
Histophilus somni	1999	36	4	4	1 to 4
Mycoplasma bovis	1999	43	0.125	1	≤ 0.063 to > 64
Moraxella bovis	2004	55	0.5	0.5	0.25 to 1
Fusobacterium necrophorum	2007	116	2	64	≤ 0.25 to >128
Porphyromonas levii	2007	103	8	128	≤ 0.25 to >128

* The correlation between *in vitro* susceptibility data and clinical effectiveness is unknown.

** The lowest MIC to encompass 50% and 90% of the isolates, respectively.

Swine

In vitro activity of tulathromycin has been demonstrated against *Actinobacillus pleuropneumoniae, Pasteurella multocida, Bordetella bronchiseptica, Haemophilus parasuis,* and *Mycoplasma hyopneumoniae.*

The MICs of tulathromycin against indicated SRD pathogens were determined using methods recommended by the Clinical and Laboratory Standards Institute (CLSI, M31-A and M31-A3). MICs for *Haemophilus parasuis* were determined using Veterinary Fastidious Medium and were incubated up to 48 hours at 35 to 37° C in a CO2-enriched atmosphere. All MIC values were determined using the 9:1 isomer ratio of this compound. Isolates obtained in 2000 and 2002 were from lung samples from saline-treated pigs and non-treated sentinel pigs enrolled in Treatment of SRD field studies in the U.S. and Canada. Isolates obtained in 2007 and 2008 were from lung samples from saline-treated and DRAXXIN-treated pigs enrolled in the Control of SRD field study in the U.S. and Canada. The results are shown in Table 4.

Table 4. Tulathromycin minimum inhibitory concentration (MIC) values* for indicated pathogens isolated from field studies evaluating SRD in the U.S. and Canada.

Indicated pathogen	Date isolated	No. of isolates	MIC_{50}** (µg/mL)	MIC_{90}** (µg/mL)	MIC range (µg/mL)
Actinobacillus pleuropneumoniae	2000-2002 2007-2008	135 88	16 16	32 16	16 to 32 4 to 32
Haemophilus parasuis	2000-2002	31	1	2	0.25 to > 64
Pasteurella multocida	2000-2002 2007-2008	55 40	1 1	2 2	0.5 to > 64 ≤0.03 to 2
Bordetella bronchiseptica	2000-2002	42	4	8	2 to 8

* The correlation between *in vitro* susceptibility data and clinical effectiveness is unknown.

** The lowest MIC to encompass 50% and 90% of the most susceptible isolates, respectively.

EFFECTIVENESS
Cattle

BRD – In a multi-location field study, 314 calves with naturally occurring BRD were treated with DRAXXIN. Responses to treatment were compared to saline-treated controls. A cure was defined as a calf with normal attitude/activity, normal respiration, and a rectal temperature of ≤104°F on Day 14. The cure rate was significantly higher ($P \leq 0.05$) in DRAXXIN-treated calves (78%) compared to saline-treated calves (24%). There were two BRD-related deaths in the DRAXXIN-treated calves compared to nine BRD-related deaths in the saline-treated calves.

Fifty-two DRAXXIN-treated calves and 27 saline-treated calves from the multi-location field BRD treatment study had *Mycoplasma bovis* identified in cultures from pre-treatment nasopharyngeal swabs. Of the 52 DRAXXIN-treated calves, 37 (71.2%) calves were categorized as cures and 15 (28.8%) calves were categorized as treatment failures. Of the 27 saline-treated calves, 4 (14.8%) calves were categorized as cures and 23 (85.2%) calves were treatment failures.

In another multi-location field study with 399 calves at high risk of developing BRD, administration of DRAXXIN resulted in a significantly reduced incidence of BRD (11%) compared to saline-treated calves (59%). Effectiveness evaluation was based on scored clinical signs of normal attitude/activity, normal respiration, and a rectal temperature of ≤104°F on Day 14. There were no BRD-related deaths in the DRAXXIN-treated calves compared to two BRD-related deaths in the saline-treated calves. Fifty saline-treated calves classified as non-responders in this study had *Mycoplasma bovis* identified in cultures of post-treatment nasopharyngeal swabs or lung tissue.

Two induced infection model studies were conducted to confirm the effectiveness of DRAXXIN against *Mycoplasma bovis*. A total of 166 calves were inoculated intratracheally with field strains of *Mycoplasma bovis*. When calves became pyrexic and had abnormal respiration scores, they were treated with either DRAXXIN (2.5 mg/kg BW) subcutaneously or an equivalent volume of saline. Calves were observed for signs of BRD for 14 days post-treatment, then were euthanized and necropsied. In both studies, mean lung lesion percentages were statistically significantly lower in the DRAXXIN-treated calves compared with saline-treated calves (11.3% vs. 28.9%, P=0.0001 and 15.0% vs. 30.7%, P<0.0001).

IBK – Two field studies were conducted evaluating DRAXXIN for the treatment of IBK associated with *Moraxella bovis* in 200 naturally-infected calves. The primary clinical endpoint of these studies was cure rate, defined as a calf with no clinical signs of IBK and no corneal ulcer, assessed on Days 5, 9, 13, 17, and 21. Time to improvement, defined as the first day on which a calf had no clinical signs of IBK for both eyes, provided that those scores were maintained at the next day of observation, was assessed as a secondary variable. At all time points, in both studies, the cure rate was significantly higher (P<0.05) for DRAXXIN-treated calves compared to saline-treated calves. Additionally, time to improvement was significantly less (P<0.0001) in both studies for DRAXXIN-treated calves compared to saline-treated calves.

Foot Rot – The effectiveness of DRAXXIN for the treatment of bovine foot rot was evaluated in 170 cattle in two field studies. Cattle diagnosed with bovine foot rot were enrolled and treated with a single subcutaneous dose of DRAXXIN (2.5 mg/kg BW) or an equivalent volume of saline. Cattle were clinically evaluated 7 days after treatment for treatment success, which was based on defined decreases in lesion, swelling, and lameness scores. In both studies, the treatment success percentage was statistically significantly higher in DRAXXIN-treated calves compared with saline-treated calves (60% vs. 8%, P<0.0001 and 83.3% vs. 50%, P=0.0088).

Swine

In a multi-location field study to evaluate the treatment of naturally occurring SRD, 266 pigs were treated with DRAXXIN. Responses to treatment were compared to saline-treated controls. Success was defined as a pig with a normal attitude, normal respiration, and a rectal temperature of <104°F on Day 7. The treatment success rate was significantly greater ($P \leq 0.05$) in DRAXXIN-treated pigs (70.5%) compared to saline-treated pigs (46.1%). *M. hyopneumoniae* was isolated from 106 saline-treated and non-treated sentinel pigs in this study.

Two induced infection model studies were conducted to confirm the effectiveness of DRAXXIN against *M. hyopneumoniae*. Ten days after inoculation intranasally and intratracheally with a field strain of *M. hyopneumoniae*, 144 pigs were treated with either DRAXXIN (2.5 mg/kg BW) intramuscularly or an equivalent volume of saline. Pigs were euthanized and necropsied 10 days posttreatment. The mean percentage of gross pneumonic lung lesions was statistically significantly lower (P<0.0001) for DRAXXIN-treated pigs than for saline-treated pigs in both studies (8.52% vs. 23.62% and 11.31% vs. 26.42%).

The effectiveness of DRAXXIN for the control of SRD was evaluated in a multi-location natural infection field study. When at least 15% of the study candidates showed clinical signs of SRD, all pigs were enrolled and treated with DRAXXIN (226 pigs) or saline (227 pigs). Responses to treatment were evaluated on Day 7. Success was defined as a pig with normal attitude, normal respiration, and rectal temperature of < 104° F. The treatment success rate was significantly greater ($P < 0.05$) in DRAXXIN-treated pigs compared to saline-treated pigs (59.2% vs. 41.2%).

ANIMAL SAFETY
Cattle

Safety studies were conducted in feeder calves receiving a single subcutaneous dose of 25 mg/kg BW, or 3 weekly subcutaneous doses of 2.5, 7.5, or 12.5 mg/kg BW. In all groups, transient indications of pain after injection were seen, including head shaking and pawing at the ground. Injection site swelling, discoloration of the subcutaneous tissues at the injection site and corresponding histopathologic changes were seen in animals in all dosage groups. These lesions showed signs of resolving over time. No other drug-related lesions were observed macroscopically or microscopically.

An exploratory study was conducted in feeder calves receiving a single subcutaneous dose of 10, 12.5, or 15 mg/kg BW. Macroscopically, no lesions were observed. Microscopically, minimal to mild myocardial degeneration was seen in one of six calves administered 12.5 mg/kg BW and two of six calves administered 15 mg/kg BW.

A safety study was conducted in calves 13 to 27 days of age receiving 2.5 mg/kg BW or 7.5 mg/kg BW once subcutaneously. With the exception of minimal to mild injection site reactions, no drug-related clinical signs or other lesions were observed macroscopically or microscopically.

Swine

Safety studies were conducted in pigs receiving a single intramuscular dose of 25 mg/kg BW, or 3 weekly intramuscular doses of 2.5, 7.5, or 12.5 mg/kg BW. In all groups, transient indications of pain after injection were seen, including restlessness and excessive vocalization. Tremors occurred briefly in one animal receiving 7.5 mg/kg BW. Discoloration and edema of injection site tissues and corresponding histopathologic changes were seen in animals at all dosages and resolved over time. No other drug-related lesions were observed macroscopically or microscopically.

STORAGE CONDITIONS
Store at or below 25°C (77°F).

HOW SUPPLIED
DRAXXIN Injectable Solution is available in the following package sizes:
50 mL vial, 100 mL vial, 250 mL vial, 500 mL vial

U.S. Patents: See US 6,329,345; US 6,420,536; US 6,514,945; US 6,583,274; US 6,777,393
NADA 141-244, Approved by FDA

Distributed by:
Pfizer Animal Health
Division of Pfizer Inc, NY, NY 10017

To report a suspected adverse reaction call **1-800-366-5288.**
To request a material safety data sheet call **1-800-733-5500.**

For additional DRAXXIN product information call
1-888-DRAXXIN or go to **www.DRAXXIN.com**

TAKE TIME OBSERVE LABEL DIRECTIONS

Made in France.

79-9949-00-3
December 2009
87 1207 2

Elanco™ AH0206

Tylan® 200 Injection™

250 mL

Tylosin

For Use In Cattle and Swine Only

200 mg per mL

An Antibiotic

Indications: In Beef Cattle and Non-lactating Dairy Cattle, Tylan 200 Injection is indicated for use in the treatment of bovine respiratory complex (shipping fever, pneumonia) usually associated with *Pasteurella multocida* and *Arcanobacterium pyogenes*; foot rot (necrotic pododermatitis) and calf diphtheria caused by *Fusobacterium necrophorum* and metritis caused by *Arcanobacterium pyogenes*.

In Swine, Tylan 200 Injection is indicated for use in the treatment of swine arthritis caused by *Mycoplasma hyosynoviae*; swine pneumonia caused by *Pasteurella* spp.; swine erysipelas caused by *Erysipelothrix rhusiopathiae*; swine dysentery associated with *Treponema hyodysenteriae* when followed by appropriate medication in the drinking water and/or feed.

Each mL contains 200 mg of tylosin activity (as tylosin base) in 50 percent propylene glycol with 4 percent benzyl alcohol and water for injection.

ADMINISTRATION AND DOSAGE:
Tylan 200 Injection is administered intramuscularly.

BEEF CATTLE AND NON-LACTATING DAIRY CATTLE – Inject intramuscularly 8 mg per pound of body weight one time daily (1 mL per 25 pounds). Treatment should be continued 24 hours following remission of disease signs, not to exceed 5 days. Do not inject more than 10 mL per site.

SWINE – Inject intramuscularly 4 mg per pound of body weight (1 mL per 50 pounds) twice daily. Treatment should be continued 24 hours following remission of disease signs, not to exceed 3 days. Do not inject more than 5 mL per site.

Read accompanying directions fully before use.

CAUTION:
Do not mix Tylan 200 Injection with other injectable solutions as this may cause a precipitation of the active ingredients.

WARNINGS:
NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN.

Adverse reactions, including shock and death may result from overdosage in baby pigs. Do not attempt injection into pigs weighing less than 25 pounds (0.5 mL) with the common syringe. It is recommended that Tylan 50 Injection be used in pigs weighing less than 25 pounds.

Do not administer to horses or other equines. Injection of tylosin in equines has been fatal.

RESIDUE WARNING: Swine:
Swine intended for human consumption must not be slaughtered within 14 days of the last use of this drug product.

RESIDUE WARNING: Cattle:
Cattle intended for human consumption must not be slaughtered within 21 days of the last use of this drug product. This drug product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. This product is not approved for use in calves intended to be processed for veal. A withdrawal period has not been established in pre-ruminating calves.

If tylosin medicated drinking water is used as a follow-up treatment for swine dysentery, the animal should thereafter receive feed containing 40 to 100 grams of tylosin per ton for 2 weeks to assure depletion of tissue residues.

Store at or below 25°C (77°F).

Restricted Drug (California) - Use Only as Directed.
NADA 12-965, Approved by FDA
To report adverse effects, access medical information, or obtain additional product information, call 1-800-428-4441.

Manufactured for:
Elanco Animal Health
A Division of Eli Lilly and Company
Indianapolis, IN 46285, USA

Elanco™ AH0206

Tylan® 200 Inyectable™

250 mL

(tilosina)

Para uso exclusivo en ganado vacuno y cerdos

200 mg por ml

Un antibiótico

Indicaciones: En ganado vacuno y vacas lecheras no lactantes, Tylan 200 inyectable se indica para el tratamiento del complejo respiratorio bovino (fiebre de embarque, neumonía), generalmente asociado con *Pasteurella multicoda* y *Arcanobacterium pyogenes*, pietín (pododermatitis necrótica), difteria de los terneros provocada por *Fusobacterium necrophorum* y metritis provocada por *Arcanobacterium pyogenes*.

En cerdos, Tylan 200 inyectable se indica para el tratamiento de artritis en cerdos provocada por *Mycoplasma hyosynoviae*, neumonía porcina causada por *Pasteurella* spp., erisipelas porcinas provocadas por *Erysipelothrix rhusiopathiae*, disentería porcina asociada con *Treponema hyodysenteriae* cuando es tratada con el medicamento apropiado a través del alimento y/o el agua para beber.

Cada ml contiene 200 mg de actividad de tilosina (como tilosina base) en propilenglicol al 50 por ciento, alcohol bencílico al 4 por ciento y agua para inyección.

POSOLOGÍA Y ADMINISTRACIÓN:
Tylan 200 inyectable se administra por vía intramuscular.

GANADO VACUNO Y VACAS LECHERAS NO LACTANTES – Inyectar por vía intramuscular 8 mg por libra de peso corporal una vez al día (1 ml cada 25 libras). El tratamiento debe continuarse durante 24 horas luego de la remisión de los signos de la enfermedad sin extenderse más de 5 días. No aplicar más de 10 ml por lugar de inyección.

CERDOS – Inyectar por vía intramuscular 4 mg por libra de peso corporal (1 ml cada 50 libras) dos veces al día. El tratamiento debe continuarse durante 24 horas luego de la remisión de los signos de la enfermedad sin extenderse más de 3 días. No aplicar más de 5 ml por lugar de inyección.

Leer todas las instrucciones adjuntas antes de usar.

PRECAUCIÓN:
No mezclar la inyección Tylan 200 con otras soluciones inyectables ya que esto puede ocasionar la precipitación de los principios activos.

ADVERTENCIAS:
ESTE PRODUCTO NO DEBE UTILIZARSE EN SERES HUMANOS. MANTENER FUERA DEL ALCANCE DE LOS NIÑOS.

Pueden ocurrir reacciones adversas, incluidos shock y muerte, en caso de sobredosis en crías de cerdos. No administrar la inyección a cerdos que pesen menos de 25 libras (0.5 ml) con la jeringa común. Se recomienda usar la inyección Tylan 50 en cerdos que pesen menos de 25 libras. No administrar a caballos u otros equinos. La inyección de tilosina en equinos ha resultado mortal.

ADVERTENCIA ACERCA DE RESIDUOS: Ganado porcino:
el ganado porcino previsto para consumo humano no se debe faenar durante los 14 días posteriores al último uso de este producto farmacológico.

ADVERTENCIA ACERCA DE RESIDUOS: Ganado bovino:
el ganado bovino previsto para consumo humano no se debe faenar durante los 21 días posteriores al último uso de este producto farmacológico. Este producto farmacológico no está aprobado para su uso en ganado bovino lechero hembra de 20 meses de edad o más, incluidas las vacas lecheras secas. El uso en este ganado bovino puede producir residuos farmacológicos en la leche y/o en los terneros nacidos de estas vacas. Este producto no está aprobado para el uso en terneros que se procesarán para carne de ternera. No se ha establecido un período de retiro del fármaco en terneros prerrumiantes.

Si se suministra agua para beber con tilosina como tratamiento de seguimiento para la disentería porcina, el animal debe recibir posteriormente alimento que contenga entre 40 y 100 gramos de tilosina por tonelada durante 2 semanas para garantizar la depleción de los residuos de tejidos.

Almacenar a 25 °C (77 °F) o menos.

Medicamento restringido (California). Usar únicamente según las instrucciones.
NADA 12-965, Aprobado por la FDA
Para informar efectos adversos, obtener información médica o información adicional sobre el producto, llame al 1-800-428-4441.

Fabricado por:
Elanco Animal Health
Una división de Eli Lilly and Company
Indianapolis, IN 46285, USA

County_____ANSWER KEY_____

Team Members _____

_____

Intermediate Team Breeding Exercise – 2014

Your team is managing a 200 head commercial sheep operation that sells feeder lambs to a feedlot. You are paid premiums for heavily muscled lambs. Your ewe flock consists of mainly Dorset cross ewes. You have been using Suffolk rams lately that are producing growthy lambs, but are not very heavily muscled. You have decided to replace two (2) of your rams and buy two (2) new rams. The rams you purchase will only be used to sire feeder lambs; no replacement ewes will be saved. Using pictures of the rams and the data on the back side of this sheet, circle your answers to the questions below and then discuss with the Contest Official why your group selected the two (2) rams you did.

[There are 9 answers to the questions worth 10 points each for a total of 90 possible points and your discussion with the Official is worth 110 possible points for a grand total of 200 possible points.]

1.) Which **two (2)** rams did you choose to use in this operation?

1 ***2*** ***3*** ***4***

2.) Which **two (2)** rams would you expect to sire the lambs that would be the shapeliest in their hindsaddle?

1 ***2*** ***3*** ***4***

3.) Which **two (2)** rams are the larger framed, flatter designed rams?

1 ***2*** ***3*** ***4***

4.) Which ram is the lightest muscled both visually and according to the data?

1 ***2*** ***3*** ***4***

5.) Which ram has the best maternal data (% Lamb Crop)?

1 ***2*** ***3*** ***4***

6.) Which ram will not pass on Scrapie susceptible genes to its offspring?

1 ***2*** ***3*** ***4***

Ram #	*% Lamb Crop EPD*	*60-Day Weight EPD*	*120-Day Weight EPD*	*Loin Eye Area EPD*	*Fleece Diameter EPD*	*Codon 171 Genotype*
1	+ 5.0	+ 3.8	+ 4.5	– 0.7	+ 0.2	QR
2	– 2.5	+ 3.7	+ 4.4	+ 1.7	+ 1.1	QQ
3	+ 8.2	+ 0.3	+ 1.9	+ 0.2	– 1.9	RR
4	+ 1.7	+ 4.4	+ 7.1	+ 1.3	– 0.4	QR
Suffolk Breed Average EPDs	+ 2.0	+ 2.5	+ 2.7	+ 0.4	+ 0.1	-----

1

2

3

4